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ABSTRACT

This document describes a pilot adult literacy program called Project REACH (Reading, Education, Achievement), which was begun in 1987 in New York by the Governor's Office for Employee Relations (GOER) and the Civil Service Employees' Association (CSEA). Following an executive summary, an introduction sets the stage by explaining the need for the program, the concept of workplace literacy, the role of labor unions in the program, and the program's relationship to relevant research and professional literature. Chapter 3 gives an overview of the program. Chapter 4 describes the Volunteer Tutor Network, which is intended for employees who read below the eighth-grade level. Among the items discussed are recruitment strategies and student evaluation results. Chapter 5 explains PALS (Principle of the Alphabet Literacy System: Computer Interactive Training Labs), which use personal computers and videodisk players to teach employees who read below the sixth-grade level. Cost effectiveness information and evaluation findings are reported. Chapter 6 discusses the positive aspects of the program. Recommendations are offered in chapter 7, followed by an 18-item bibliography. The four appendices contain the Project REACH work plan, the SKILLS Profile, a checklist, the table of contents of the PALS teacher's manual, and a compilation of questionnaire responses concerning the People Reaching People component of the program. (CML)

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PROJECT REACH

FINAL EVALUATION REPORT

June 1988

Prepared by :

Alan L. Gross, Ph.D. --Project Co-Director

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of the City University of New York

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1. EXECUTIVE SUMMARY

The purpose of this Final Evaluation Report is to describe Project REACH (Reading, Education and Achievement) and to assess its progress from inception in February 1987 through June 1988.

The Civil Service Employees Association's (CSEA) Labor Education Action Program and the Governor's Office for Employees Relations (GOER) commissioned Cybernetica, Inc. in 1986 to assess the need for training programs in adult education skills. The findings indicated a clear and pressing need for such programs.

Cybernetica's Final Report indicated that 39% of the sample of New York State employees tested under the eighth-grade reading level and 21% scored under the sixth-grade level. In addition, Cybernetica found that there was a great deal of interest on the part of CSEA employees in upgrading their literacy skills. It was recommended, therefore, that CSEA/GOER expand its commitment to literacy instructional programs, by making such programs accessible to employees in the workplace.

Project REACH was a pilot literacy program administered by GOER and designed for employees represented by the CSEA. The Project, which began in February 1987, as an outcome of the needs assessment conducted by Cybernetica, Inc., experimented with several ways to deliver literacy training:

> One-On-One literacy tutoring, known as Project REACH's Volunteer Tutor Network: One-on-One;

> Computer-assisted literacy instruction in small groups set up as PALS labs (Principle of Alphabet Literacy System: Computer Interactive Training lab), and

> Videotapes to teach literacy called "People Reaching People" with student workbook and instructor's manual.

In November 1987, at GOER's request, the Center for Advanced Study in Education (CASE) of the Graduate School and University Center of the City University of New York (CUNY) undertook an evaluation of two components of Project REACH:

> the Volunteer Tutor Network, and

> the PALS Labs.

As a professional courtesy, the Evaluation Team agreed to review the "People Reaching People" videotapes, student's workbook, and instructor's manual. Appendix E gives detailed information about the process used to review the

videotape project component. Project REACH's Workplan (See Appendix A, Section 9.1) describes the Volunteer Tutor Network and the PALS approaches in detail; briefer descriptions appear below.

Volunteer Tutor Network: One-On-One

This component of the pilot program, based in Albany, was a "tutor-buddy" approach geared to CSEA-represented employees who read below the eighth-grade level. Students and tutors from the New York State workforce committed two hours a week over a twelve-month period to tutoring sessions. Half the tutoring sessions were held on state release time, based on contractual union agreement; the other half was held on the employees' own time. Tutor training, provided by Literacy Volunteers of America (LVA) in two full workdays, was conducted entirely on state release time.

Tutorial sessions were held in a variety of workplace proximal locations, e.g. a library mutually agreed upon and with flexible scheduling. Each of the 23 active pairs in the tutoring component came into being because tutees had the need to improve literacy skills. Specific and diverse interests were recognized at program entry, requiring individualization of curriculum and methodology. For example, one tutee entered the program because he wanted a better civil service job and needed help with completing the examination application. Another tutee wanted to read a book to his one year-old son, so the tutorial sessions began by using this motivation as a springboard to improving reading.

All tutees were administered application and intake forms which provided basic biographical data. Pre-test data were obtained either prior to the tutoring session or shortly after tutoring began with administration of the READ test (word reasoning, reading comprehension, listening) and the SKILLS PROFILE (a self-report questionnaire measuring student perceptions of reading and writing skills - Appendix B, Section 9.2). Most of the tutees come from The Office of General Services and the office of Clerical Services.

The analyses of the pre-test, post-test, and background information for tutors/tutees at the Albany site yielded the following major findings:

* For all but two of the students, tutoring did not begin until May of 1987;

* The tutee group was basically free of hearing, visual, or speech problems;

* English was the primary language for 79 percent of the students;

* The majority of students were male;

* Approximately one third of the students had educational levels at or below seventh grade, with none having any post-secondary education;

* Tutees expressed a strong need for improving their reading and writing skills;

* Although the majority of students reported being able to read more casual or non-job related material (e.g. magazines, labels, novels, short stories, newspapers, menus, street signs, the Bible), the majority reported difficulty with reading of job related or performance oriented materials, such as election ballots, maps, application forms, checks or money orders, and spelling;

* Students reported that they spend relatively few hours reading and writing. The average number of hours of reading per week was 5.5 hours, while the average value for writing was 3.6 hours. The average number of weekly TV viewing hours was 15.3. Furthermore, students reported that the average number of hours spent weekly in the REACH program was 3.8.

Based on observations and interviews conducted at the Albany site, an evaluation team reading specialist indicated that the tutoring component showed promise and potential due, in large part, to the exemplary tone set by the program administrators. Note was made of an openness to new ideas, flexibility in making changes, and a genuine caring and appreciation for the tutors and students combined with a willingness to listen to their thoughts and problems. These factors seemed ideal for a program whose basic premise was providing for the adult learner's need for dignity.

A review of the recruitment materials and process undertaken at a subsequent date with more than 25 individuals composed of union representatives, agency heads, tutors in training, GOER staff members, and potential tutees resulted in findings which were overwhelmingly positive.

Post-test data were attained from readministration of the READ test and the SKILLS PROFILE. These scores were used, in comparison with pre-test data, to assess learning gains for this component of Project REACH.

The results of the analysis of the pre-test post-test changes are difficult to interpret due to the large amount of missing data. If the analysis is restricted to those students for whom both pre- and post-score data are available, positive results are observed.

* Gains are evidenced for the Word Reasoning and

Listening scales of the READ test.

* Gains of 15 percentage points or more are observed for several items of the SKILLS profile.

PALS labs (Principle of the Alphabet Literacy Systems: Computer Interactive Training Lab)

The second part of Project REACH, PALS, was an interactive videodisc program for New York State employees who read below the sixth-grade level. The PALS system is a structured, developmental literacy skills program, which utilizes IBM software and interactive videodisc equipment in office-like laboratories. Students learned to improve literacy skills by using personal computers in a PALS lab at the job site. Training sessions were conducted one hour a day, five days a week for 20 weeks.

The Principle of the Alphabet Literacy System, developed by Dr. John Henry Martin, is a research-based interactive instructional system, which utilizes IBM word processors and typewriters for touch typing training, word and sentence composition, and the teaching of reading through phonics.

Project REACH administrators supervised the formation of eight PALS labs situated throughout New York State, each managed by a coordinator. CASE members of the Evaluation Team visited personnel at three PALS sites - the Brooklyn Developmental Center, the Kings Park Psychiatric Center, and the Pilgrim Psychiatric Center. At each of these three sites the IBM literacy lab consisted of multiple personal computers, IBM Info Window systems (which enable students to use computers by touching their screens), and videodisc players containing the instructional audio/visual materials. Students in PALS labs spent half of each one-hour class working with the videodisc course and half using word processing programs on PCjrs or working on typewriting.

The Brooklyn Developmental Center's PALS lab was the first to become operational late in December 1987. It became the first site visited by members of the CASE Evaluation Team during January and February 1988. During these visits, CASE staff members observed the PALS lab in session, talked informally with students, and attended a staff meeting. It seemed apparent that students were motivated to learn, were following the instructional materials, were using touch typing techniques to operate the computer keyboard, and were making the required progress reports in their logs.

An outcome of the January 25th staff meeting at the Brooklyn Developmental Center was the development of a prototype for pre-test data collection, which was used as a model for the PALS Labs at Kings Park and the Pilgrim Psychiatric Centers.

The Evaluation Team made site visits to the Kings Park and the Pilgrim Psychiatric Centers on April 27 and April 28, 1988 respectively. Post-test data were requested from

all three PALS lab sites so that an impact statement could be made in this Report.

The analysis of the reading gains was hampered by the large amount of missing data. Whereas 44 students were initially administered the TABE reading test and the SKILLS Profile, post-test data were available for only 13 students. An analysis of the 13 students having complete data showed that there was a gain of nearly one grade level on the TABE test. Further, there were meaningful gains on specific items of the SKILLS Profile.

The Preliminary Evaluation Report, submitted March 31, 1988, described and assessed the progress of the Volunteer Tutor Network and the PALS labs. Recommendations were made concerning each of these two program components. This final report extends the period of evaluation to June 30, 1988 and includes post-test data.

Overall Comments

Based on examination, observation, and assessment of Project REACH, as described throughout this Evaluation Report, the CASE Evaluation Team concludes that both components of the pilot program show potential and are effective, as indicated in the following statements:

* The Project responded to an urgent and pervasive need to improve literacy skills in the workplace among New York State government workers.

* By utilizing the workplace, the Project provided a familiar and non-threatening environment.

* Through the union contract, the Project was subsidized and legitimated by release time for tutees, as well as PALS labs trainers.

* The Volunteer Tutor Network: One-on-One literacy approach provided for individualized instruction, consistent with each student's goals and objectives stated at program entry. On the other hand, the PALS lab component presented a structured approach to the teaching of reading that by its nature was not individualized.

* GOER staff members as well as tutors and PALS lab personnel were conscientious, hard working, dedicated, and highly motivated individuals.

Project REACH began its operations in February 1987; administrators of the program used February and March for organizing, training, and planning. In the short period of time since April 1987, the pilot administrators have accomplished a great deal considering their limited staff

and time constraints. If Project REACH is to become even more effective as it moves beyond the present pilot stage many points should be considered.

Some of the most important recommendations offered by the Evaluation Team follow:

* Reading and literacy skills experts should be made available to the Project.

* Appropriate sequential and developmental materials and curriculum for the Volunteer Tutor Network: One-on-One component should be developed.

* The Project should employ staff to observe and monitor all aspects of the program. In addition, ongoing and regular staff development and training sessions for tutors and PALS coordinators should be conducted.

* The Project should broaden its definition of basic skills beyond reading to include employees' ability to read, write, compute, communicate, and problem solve.

* The Project should focus on workplace literacy by using the functional contexts of adult workers, which are integrated in real job tasks.

* Measures should be developed which assess workplace literacy.

* Additional efforts should be expended to insure a more organized and complete system of data collection. Because such limited post test data were presented, evaluators were unable to make significant statements about the impact of Project REACH in terms of its ability to improve literacy skills. By providing pre-/post-test data for such a small number of participants, it is possible that a disservice was done regarding the ultimate effect of Project REACH on literacy skills. Future evaluations of Project REACH should be based on a mandated process of pre- and post-test data gathering.

2. INTRODUCTION

2.1 STATEMENT OF NEED

The Civil Service Employees Association's (CSEA) Labor Education Action Program and the Governor's Office for Employee Relations (GOER) commissioned Cybernetica, Inc. to undertake research "to assess the need, among CSEA represented employees, for training programs in adult basic educational skills." (p.ii) In its Final Report (1986), Cybernetica, Inc. reported the following data about reading levels of a sample of State employees who had been assessed:

> A median reading grade level equivalent of 10 years and 0 months was observed for the sample as a whole. Approximately 75 percent of the sample scored below what would be expected for persons who had completed twelve years of formal education. Approximately 39 percent fall below what would be expected for persons who had completed eight years of formal education, and 21 percent fall at or below what would be expected for persons with only a primary education, i.e. six years. These reading levels are comparable to those of similar groups in the general population. From the observed reading levels it is projected that at least 57,000 read below the twelfth grade level, at least 26,000 read below the eighth grade level and a least 16,000 read at or below the sixth grade level. (p. iii)

Cybernetica found that there was a great deal of interest on the part of CSEA employees in upgrading their literacy skills. It was recommended, therefore, that "in light of the level of need and interest" that CSEA/GOER expand their commitment to literacy instructional programs (p. 48).

Further corroboration of the enormity and pervasiveness of the need to upgrade literacy skills in the workplace comes from a broader-based study done by the Education Commission of the State (ECS), using national statistics. ECS acknowledged that the number of Americans who cannot read is unknown, because varying definitions of literacy have led state and federal officials to place widely different figures on the problem's extent. For example, in a survey of nine sample states, local officials estimated that 7.5 million could use literacy services; federal authorities gave the number as 17 million. ECS indicated that half the states have formal definitions of illiteracy,

with most of these relating it to ability to read at the fourth-grade level.

Based on its own estimates, ESC concluded that "an average of 720,000 adults over age 16 in each state need help learning to read, but that only 9 percent of those receive help"; of those in need of help, ESC added:

> The majority of adults 'in need' are not minorities, on or off the welfare rolls. The majority are white Americans. (p. 6)

Hull and Sechler (1987) viewed the "pool of illiterate adults" as "growing at an alarming rate in this country." (p. vii) They used a U.S. Department of Education estimate, placing the pool of illiterate adult persons in this country at 2.7 million, to dramatize the problem's seriousness in terms of today's technologically-oriented workplace.

As indicated above variations in the size of the target population occur because researchers use differing standards by which to determine illiteracy. The definition for illiteracy used by the National Center for Research in Vocational Education (NCRVE) seems to be a practical one -- illiteracy being defined as "the inability to read, write, or figure well enough to read a bus schedule or job manual, fill out a job application, or balance a checkbook." (p. 1) Using this definition, NCRVE, which uses "basic skills" and "literacy skills" synonymously, places the number of adult Americans with inadequate basic skills at a minimum of 60 million.

Regardless of the method used to obtain figures for American adults who have needs for increased literacy, there is growing awareness of the impact of this problem on the workplace, American society, and individual lives. Hull and Sechler (1987) made a gloomy forecast when they stated:

> A great many jobs in American business and industry may be threatened because the influx of sophisticated technological equipment and processes in the workplace is outstripping the ability of many employees to use them effectively. (p. 1)

A case for upgrading literacy can be made also for workers in their lives outside the workplace, which could be richer or more rewarding with improved reading skills.

Within this context, goals and objectives of Project REACH are consistent with the national need and with the specific need for some CSEA members to upgrade their literacy skills for personal and workplace motivations.

2.2 WORKPLACE LITERACY

A Department of Education survey of 101 executives from small and medium-sized businesses identified the need for

workers to have stronger basic skills to accomplish tasks in today's workplace and to adapt to tomorrow's work environment. Other surveys also reflect concerns of the business community for a more skilled workforce for the 1980's and 1990's. The definition of basic skills most often used by these employers includes the ability to read, write, compute, communicate, and problem solve. In addition, business leaders stress the importance of good work habits - self-discipline, reliability, perserverance, responsibility, and respect of others' rights - as necessary adjuncts to employee's basic skills.

As the United States has moved from a manufacturing to a service economy, interest in the workplace as a site for continued learning continues to grow. According to U.S. Bureau of Labor Statistics data, about 90 percent of new jobs through 1995 will be in services, compared with only 8 percent in manufacturing. New technology, which has created new jobs and changed others, often became a bane as it revealed basic skills problems among experienced, older workers where none had been known to exist.

An outgrowth of the public/private business community's concern about present and future workforce participants is the broader issue of America's competitiveness in world markets. A joint publication of the U.S. Department of Labor and U.S. Department of Education (1988) stated:

> At the policy level, national and state officials are calling for stricter accountability and higher standards for the educational system, including the issue of competency testing and higher requirements for high school graduation. In addition, federal and state funding is increasing for adult education, job training and literacy efforts. (p. 3).

Analysis of workforce trends validates the belief that future jobs in America will require more complex and more sophisticated skills than today's jobs. The Hudson Institute's WORKFORCE 2000 report projects that by 1995 the United States will face a serious mismatch between job skill requirements and the available pool of workers.

The Hudson Institute's workplace research concludes that the basic skills tasks workers perform routinely are different from those taught in schools or in general adult literacy programs, because they are integrated in real job tasks. It recommends, therefore, using the functional contexts of adult workers to teach these needed literacy skills. The Bottom Line: Basic Skills in the Workplace summarized the issues by stating:

> Research has found that the most successful workers are those who can assess and organize information, monitor

> their own understanding, and who can explain the purpose of reading and writing for the accomplishment of a task. (p. 6)

2.3 ROLE OF UNIONS

Labor unions, throughout the country, have had a long and honorable tradition associated with educational programs for their members. There is nothing new about labor's involvement in education; in fact, commitment to educational programs is as old as the labor movement. Organized labor, for example, played a central and responsible role in the creation of the American system of universal free public schools in the early 19th century.

Today, hundreds of thousands of women and men take part in union-sponsored educational programs individualized to meet goals, needs, and life-style constraints. These programs are comprehensive, ranging from basic literacy, GED test preparation and trade courses to college and university degrees.

The urgency to support worker education programs has intensified because more jobs have undergone radical change, thus transforming the workplace and, often, according to the Business Council for Effective Literacy (BCEL), "bringing disastrous consequences to great masses of jobholders." (p. 1)

Statistics supplied by the Office of Technology Assessment of the U.S. Congress reported that 11.5 million American workers lost jobs between 1979 and 1984; Bureau of Labor Statistics confirmed that two million more continue to be laid off each year. These figures become even more dire in view of the fact that large numbers of these workers lack literacy skills to change and secure new jobs.

Unions have shouldered responsibility for helping displaced workers to upgrade their basic skills in order to be prepared to adapt to changing work situations. BCEL noted that:

> AFL-CIO president Lane Kirkland, at the Federation's first national conference on education and training in 1986, called for an 'adult education program on a scale and of a design never tried before.' He said that 'unions will be going to the bargaining table to negotiate programs and learning time along with work time.' (p. 1)

CSEA's involvement and joint sponsorship with GOER of Project REACH represent an ongoing union commitment to the provision of basic skills instruction. BCEL described such union sponsorships as "natural" because "they are in daily

workplace contact with their membership. They are trusted to work on their members' behalf. And, most important, they speak the language of the working man and woman." (p. 4)

2.4 RELATIONSHIP OF PROJECT REACH TO RESEARCH AND LITERATURE IN THE FIELD

Project REACH appears to be unique in its provision of direct tutorial literacy services by civil service agency employees.

Basic remedial educational curricula exist within a wide range of programs and settings within both business, union and educational contexts. According to the American Association for Adult and Continuing Education (1987) 198 companies, 17 unions, 6 auto industry-union collaboratives, 51 public or non-profit employers and 23 hospitals and providers of health services to convalescent or nursing homes as well as 7 colleges and 144 public assistance programs, offer adult literacy services.

A number of tutorial instructional materials and services are currently available. Among these are materials like those provided by the Kansas State Department of Education's Volunteer Tutor Utilization (1986) program. This program explores the possibilities of using volunteer tutors effectively in over 16 local adult basic educational programs. Tutors are considered as an essential feature within adult literacy programs, assisting in classes by extending staff as well as in selecting and training volunteer managers.

The Pennsylvania State Department of Education's Mid-State Literacy Council (1985) has developed a series of six readers that assist tutors in their reading programs. These readers utilize language experience stories. Within the adult literacy services provided by Pennsylvania's Department of Education, Project Proud (People Reading Their Own Unique Dictation) has organized a program designed to focus on problems associated with book-centered on-on-one learning. This program attempts to eliminate all inappropriate materials. It is based on the use of the language experience approach. Tutors have students dictate stories concerning their experience, knowledge and concerns and these texts become the basic workbook materials for ongoing sessions.

The Massachussetts Center for Literacy has designed a Language Experience Approach for Computer Aided Instruction (1985). It is a guide designed for trained tutors who teach adult literacy students on a one-on-one basis using computers with word processing capacities and the language experience approach. The Massachussetts Collaborations for Literacy program offers an Intergenerational Reading Project handbook for tutors. This program is designed to provide for the recruitment of college work study tutors who work with adult learners and their children. The handbook includes logs written by tutors including their strategies

and observations of literacy experiences in intergenerational learning settings.

The largest and oldest provider of tutorial services is the Literacy Volunteers of America (1984). LVA is described as a "national, non-profit education organization that provides materials and services to assist in the development of volunteer tutorial programs in basic reading and conversational English. Expanding beyond its network of close to 200 programs in 31 states, LVA supplies correctional, library, adult basic education, and other literacy programs with materials and consulting services in tutor training, program organization and management."

The Northwest Regional Educational Laboratory in Portland, Oregon has developed a guide entitled "Literacy Outreach: The Community Link" (1985). It is addressed to community based organizations wishing to start or develop adult literacy programs. It provides strategies for recruiting and training volunteer literacy tutors. Community and grassroots support for the realization of the goals of increasing awareness of literacy intervention and strategies for implementation of a support network of helpers are reviewed in detail.

The Oakton Community College District in Skokie, Illinois has reviewed a multimodal literacy tutoring approach. Their "Learn to Read: A Project to Serve Functionally Illiterate English-Dominant Adults" (1984) entailed the use of tutors in one-on-one sessions. Over fifty individuals participated in literacy skills development using a variety of approaches and materials including peer/pairing instruction.

The Center for Literacy, Inc., of Philadelphia, Pennsylvania (1987) has a review of a project designed to strengthen a volunteer literacy council's ability to provide an innovative curriculum to meet the needs of students with minimal skills. Entitled "Inservice Seminars for Tutors and Students to Increase Motivation and Retention in a Volunteer Adult Literacy Program" this publication reviews the training seminars and reports of students and volunteers in the program.

An overview of the history, trends and evolving debates in the field of literacy volunteerism has been written by Paul Isley in his "Adult Literacy Volunteers: Issues and Ideas" published by the National Institute of Education. Isley (1985) reviews the theoretical premises of programs using volunteers and analyzes both the Literacy Volunteers of America and Laubach Literacy Action programs.

Marvin Pasch and Nancy Oakley have written "An Evaluation Study of Project Learn" (1985) examining both the characteristics and attitudes of tutors and students in the project located in Cleveland, Ohio. A mail questionnaire of 183 tutors and 131 students was administered with post-test for students completing the program after 50 hours of tutoring. Tutors reported finding only minimal progress for students and requested additional diagnostic assessment of

students' abilities and needs. Tutors also requested ongoing training by specialists. Students requested more interesting and relevant reading materials, convenient locations and times for sessions as well as available counselling.

Mary Tenopyr's "Realities of Adult Literacy in Work Settings (1985) addresses the broad spectrum of controversy in the implementation of work site based education. Questions regarding the levels adequate for performance, the shifting nature of workplace literacy and who will provide training and service for workers, are discussed in detail. The author recommends the development of a database of information about literacy needs and deficiencies by researchers.

3. PROJECT REACH - OVERVIEW

REACH (Reading, Education and Achievement) was a pilot literacy program administered by GOER and designed for employees represented by CSEA. This program experimented with several ways to deliver literacy training: one-to-one tutoring; computer-assisted instruction in small groups, and a videotape series with instructor's manual and student workbook. Project REACH was the successor to the CSEA IDEA Program (Institute for Development, Education and Advancement).

An article which appeared in Public Personnel Administration entitled "Policies and Practices for Personnel" (1988) summarized the first two training components of the pilot program, and is reproduced here in its entirety on page 10.

A more detailed overview of the three components of the pilot program, categorized as the

1. Volunteer Tutor Network: One-on-One;
2. PALS (Principle of the Alphabet Literacy System): Computer Interactive Training Lab, and
3. Videotape Learning can be found in the PROJECT REACH WORKPLAN, dated January 14, 1987 (Appendix A of this Report).

The Preliminary Evaluation Report, submitted March 31, 1988, described and assessed progress of the Volunteer Tutor Network and the PALS labs. In addition, recommendations were made concerning each of these two program components. This Final Report extends the period of evaluation to June 30, 1988 and includes post-test data on the Tutor Network and the PALS labs.

The CASE Evaluation Team was commissioned to begin its assessment function as of November 2, 1987. From that date until the first visit (11/17/87) to the Albany site, the Evaluation Team made plans, developed assessment instruments, and communicated by letter and telephone with Diane Wagner, Program Administrator, and members of her staff. Because the Volunteer Tutor Network: One-on-One component was operational only in Albany, CASE staff members, as well as an additional reading specialist, made several site visits on December 10 and 17, 1987 and January 27, 1988 to gather pre-test data, review reading materials, examine records, observe tutoring sessions, and interview tutors/tutees. Pre-test data obtained from this component of Project REACH were included in the Preliminary Report. In this Final Report, post-test data are analyzed and compared to pre-test data; appropriate impact statements, resulting from these comparisons, are set forth.

PALS labs became operational at different times during late December 1987 and early 1988. Based on information received from Project REACH staff members concerning the readiness of PALS centers to receive visits, CASE evaluation personnel went to the Brooklyn Developmental Center on January 25 and February 8. The model for data collection

developed with the Brooklyn Developmental Center was subsequently introduced at two additional sites - Kings Park and Pilgrim. This Final Report, therefore, includes pre-test/post-test data, and site visit writeups for these three PALS labs.

Program Helps State Employees REACH Their Reading Goals

[¶1.3] In the spring of 1986, New York State conducted a study that tested employees' math and reading levels. The results showed that a significant percentage of the state workforce was reading at or below the eighth grade level. So, in February 1987, the state started Project REACH (Reading, Education, and Achievement), a literacy training program, to help state employees improve their reading skills.

Buddies and PALS. The pilot program, which was launched in Albany, is divided into two parts. The first part is the tutor-buddy program, which is geared to employees who read below the eighth grade level. Under this program, students and tutors, both from the state workforce, are asked to commit two hours a week over a nine-month period to tutoring sessions. Half the tutoring session is held on state release time and the other half on employees' own time.

Tutors receive two full workdays of tutor training. The training, which is provided by Literacy Volunteers of America, is done entirely on state release time.

The second part of the program, PALS (Principle of Alphabet Literacy System), is an interactive video program for employees who read below the sixth grade level. Students learn by using personal computers in a lab at the job site. Training sessions are one hour a day, five days a week for 20 weeks.

=PALS' PLUSES→ "While the cost of a typical PALS lab is around $60,000," says Diane Wagner, program administrator, "it can be used 24 hours a day, which is extremely attractive in work settings having employees who cover three shifts." Another feature of the lab, she notes, is that students learn to read, write, and use a computer keyboard, all at the same time.

Publicizing the program. Employees are encouraged to participate in the program in a variety of ways, including posters displayed at the work station, inserts in paycheck envelopes, videos shown at worksites, as well as through the outreach efforts of agency affirmative action and employee assistance program coordinators and union representatives.

Wagner says that, although the program's mission is quite large, "the reward to be gained from potential new readers outweighs the size of the challenge." (pp.4-5)

4. VOLUNTEER TUTOR NETWORK: ONE-ON-ONE COMPONENT

4.1 OVERVIEW

The one-on-one tutoring component of the pilot program was designed for CSEA employees who read below the eighth-grade level. Volunteer tutors, initially screened by REACH staff members and then trained in two-day workshops by Literacy Volunteers of America (LVA) consultants, were paired with tutees, who wanted to improve their literacy skills. Each student and tutor pair - both members of the State workforce - comprised a "buddy" relationship which required them to spend at least two hours per week together over a twelve-month period for the purpose of building reading and comprehension skills. Tutors' training was done entirely on State release time; half the time for tutoring sessions occurred on State release time, with the other half on employees' own time.

Distinctive features of this component of the pilot project included:

* CSEA members throughout New York State eligible for literacy skills improvement based on reading scores below eighth-grade level;
* one-on-one tutoring for tutees by volunteer tutors;
* tutor training using the Literacy Volunteers of America (LVA) program model, and
* special recognition for tutors and tutees, e.g. tutor lapel pin, membership/certification card, student completion certificate, annual award ceremony.

In order to gather data for this Evaluation Report, a team consisting of the three CASE staff members conducting this evaluation together with a specialist who is a recognized reading and adult learning expert, visited Albany in groups of two on November 17, December 10 of 1987 and January 27, 1988 to perform functions such as:

* examine documents related to participants;
* assess relevance of reading materials;
* interview GOER staff;
* observe tutors/tutees pairs in tutoring sessions;
* conduct structured interviews with selected tutors and tutees;
* interview union and agency staff;
* conduct a "quasi focus group" discussion related to recruitment, and
* observe tutor training.

The findings related to these visits and assessments were embodied in the Preliminary Report and have been integrated throughout this Final Report.

4.2 SPECIALIST'S REPORT

Dr. Miriam Balmuth, reading/literacy skills expert, and adult education specialist, made two site visits to Albany (December 10 and 17, 1987) accompanied by Dr. Midlred K. Lee, a member of the CASE team. Excerpts from Dr. Balmuth's findings and recommendations set forth in her January, 1988 report follow.

Overview of the Program

At the time of the site visits, the program under th direction of the current administrators had been in operation approximately nine months and was already showing signs of effectiveness. In view of the program administrator's limited prior background in literacy and omits adult literacy programs, this is not a lengthy period for a new adult literacy program to bear discernible fruit. What can be stated at this point about the quality of the program--as it relates, in the end, to the instructional features-- is:

The Concept of the Program

A program of government employees volunteering to assist and be assisted in a process of upgrading literacy skills appears to have great value in that it offers to both tutors and students opportunities for significant personal growth and gratification. Even now, interviews with students and tutors reveal that the Tutors Component has begun to elicit such growth and gratification. Thus, two students who have been given new job responsibilities requiring more advanced literacy skills reported "self-satisfaction of helping others," "learning new interpersonal skills," "becoming more tolerant of people who have less" and "greater understanding of the people you work with." These changes were reported by one tutor to have been translated into a warmer feeling at the Christmas party this year, a feeling of "everyone together."

Moreover, as is true of successful workplace literacy programs in general, not only do both categories of tutoring participants benefit, but also, because of the employees' upgraded skills and enhanced esprit de corps, the employer benefits as well. In the case of Project REACH, where the employer is the citizenry of New York State, the state's entire population stands to benefit.

The Climate of the Tutors Component

The tone that has been set by the program administrators is an exemplary one. Already in place is an openness to new ideas, flexibility in making changes, a genuine caring and a willingness to listen to thoughts and problems. As one tutor indicated, there is a feeling communicated of "We all learn together," ideal for a program whose prime underpinning would be the providing of a sense of dignity to all participants.

Number of Students in the Program (Recruitment)

It is not surprising that the initial recruitment efforts have resulted in a relatively small number of volunteer students. The much larger number of those who volunteered to be tutors is evidence that publicity about the program spread to many more persons than the number of volunteer students would indicate.

An underlying recruitment problem here as elsewhere is the fact that adults with serious reading problems are haunted by a lifelong succession of literacy defeats, including failures in varieties of reading programs. Memories of such failures act as powerful deterrents against risking yet another fruitless, painful experience.

The workplace, however, offers an excellent structure for the kind of word-of-mouth personal recruitment that, as with other adult literacy programs, Project REACH reveals to be the most effective way to attract students into volunteering for literacy assistance. On the student application forms (verified for those interviewed) the most frequent source of initial program awareness was a personal contact -- generally a supervisor or a fellow worker. Given time, what works best in recruitment is the kind of instructional excellence that generates a seeding of gratified students, teachers, and workplace supervisors to provide such word-of-mouth publicity. This should be coupled with a steady infusion of graphic reminders like the posters, flyers, and film showings also mentioned by program participants when stating how they or their fellow workers first heard about the program.

Some suggestions for promoting instructional excellence are listed below under Recommendations.

Tutorial Sites

The workplace as a tutorial site often facilitates literacy instruction by providing an efficient saving of time. Here, too, Project REACH administrators have done well, not only by providing sites, but also by showing flexibility--sessions are held in a variety of workplace proximal locations, including a library.

Scheduling of Sessions

The current practice of scheduling one two-hour session a week-- with one hour taken from each volunteer's working time--seems to be a useful one for those currently in the program. Moreover, the flexibility shown by the administrators in allowing other scheduling arrangements (such as a Saturday session) is helpful.

Counselling Component

Integral parts of an effective literacy program are the structures that provide opportunities for students and teachers to discuss with trained personnel those non-instructional factors that impinge on instruction. A start

has been made in this direction in the tutorial component of Project REACH: The project administrators have set up a climate that allows for the discussion of feelings by the tutors. Also, one of the administrators has the skills of a social work background, which appears to have been put to good use by a reaching out to contact each tutor by telephone on a regular basis.

* * * * *

On the whole, in the short time since April, 1987, the administrators have established many aspects of a good workplace literacy program. In fact, they have done remarkably well considering their exceedingly limited numbers and available time.

Recommendations

At this point, the program is in dire need of additional trained and knowledgeable personnel to carry out the requirements of an effective program beyond the requirements already instituted. Recommendations are therefore presented under the rubric of the ways that additional personnel/time could be used.

Staff Development

Reading instruction approaches and techniques are, of course, the heart of programs like Project REACH (the R stands for Reading), and the nature and quality of orientation and on-going assistance in methods of reading instruction are of utmost importance. Moreover, when inexperienced volunteers are doing the teaching, generous staff development should be the prime administrative focus.

While the orientation sessions in Project REACH gave some background for the initial sessions of tutors and students, the reading instruction aspect of on-going staff development as it now stands is totally unsatisfactory. What occurs is that instructional questions (sadly, few of these are even raised) are directed to the administrators, who then call informally upon a Literacy Volunteer of America contact for second-hand answers that are then relayed back to the tutor.

It is recommended, therefore, that there be hired reading and adult-literacy knowledgeable staff personnel* who provide a sensitive pre-tutoring orientation and who are then available to tutors for individual conferences, both scheduled and as the need arises. In addition, regularly

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*The wording "reading and adult-literacy knowledgeable" is carefully chosen, based on awareness of the experiential backgrounds of the varieties of practitioners available in the adult literacy field. The New York State Education Department Bureau of Adult and Continuing Education Program Development is currently an excellent resource for information and suggestions on this subject, as well as on other aspects of adult literacy program development.

scheduled group meetings of tutors should be set up, led by reading and adult-literacy knowledgeable personnel, for the exchange of ideas and information about tutors' mutual needs and problems.

On this question of personnnel to provide thorough, frequent guidance to the volunteer tutors, it should be noted that the model that now appears to be guiding Project REACH's tutorial component is that of a non-profit, charitable organization like LVA. However, aside from the use of volunteer tutors, there is little similarity between LVA and a union-backed, public sector workplace program like Project REACH. The LVA is staffed at almost all levels by volunteers, supplemented by a few, mostly administrative, insufficiently available professionals, not because paid professionals are undesirable, but because the organization, a charity, is constrained by limited funding resources. Moreover, it does not produce the results that are possible with less stringent budget outlays. New York State's program, however , is not a charity but an investment, with solid returns on the horizon. There is, therefore, no reason to place it on a starvation diet for the kind of instructional support services that inexperienced volunteers require.

Paperwork

In addition to the time needed for preparing and sending out communications to the various bodies with which Project REACH is involved, substantial personnel time is needed for keeping the variety of records that are essential to a base of decision-making information as the program evolves. Such records and their purposes include, at least: (1) Recruitment data, to see what attracted students and therefore if any modifications of recruitment information and strategies might be helpful in light of subsequent student functioning. (2) Attendance records, to keep track of poor attendance and drop-out patterns, in order to follow up on students and see whether program modifications might be in order, as well as to encourage and facilitate reentry. (3) Student literacy functioning on entry into the program, as a yardstick to measure progress. The measures derived could be used to ascertain relationships between student progress and specific program characteristics. (4) Detailed records of student progress--including tutor logs and any formal test results. At this point, although a required aspect of the tutorial sessions, logs were not readily available nor, if they had been, was there anyone on staff competent to evaluate and give appropriate assistance for any of the instructional features of the logs.

Intake of Students

Individual conferences with prospective students should precede the start of any tutoring. Such conferences should include, for example, discussion of a student's goals and expectations of the program, situational factors within the student's life that might affect program participation in

any way, possible causal factors (including visual and hearing deficits that might require evaluation), student interests, and most important, ascertaining student's specific strengths and needs in instruction-- to be relayed to the tutor so that initial instructional sessions can be designed for success. Knowledgeable personnel should conduct such intake conferences.

Screening of Tutors

According to the current program structure, tutoring is open to anyone who completed high school. At present, the program is fortunate in having tutors with at least two years of college -- some with six years of post high school education. In the future, however, some applicants may not be as well equipped or as well-functioning. There should, therefore, be personnel/time to interact with and screen tutorial applicants, through interviews and acceptance into the program. Ongoing tutor monitoring time is also necessary, as well as time to counsel tactfully when it appears that competent tutoring is not a volunteer's forte. At least one individual has questioned the quality of some current tutors from perceptions of them both in the workplace and as trainees during the orientation period.

Feedback for Administrative Improvement

Due to a lack of personnel time, such necessary functions as visiting the tutorial sites are not currently being carried out to any adequate degree. Thus, not only are the tutorial sessions never observed (such observations, or course, should not be too frequent or be used as a supervisory tool--just for insight into any problems that can be administratively addressed) but there is no personal knowledge of the tutorial sites themselves and how the tutors and students gain access to them. Some of the sites are certainly adequate, but in at least some cases there are problems such as tutors having to scrounge each time for a free place in which to hold the session. The tutors may be shy about "bothering" others about what they perceive to be their own problems.

Difficulties can be worked out, or even, with administrative personnel available, can be prevented, once the possibility of such problems is realized. Without personnel time available to ascertain them, however, they can be overlooked and undermine the program.

Selection, Ordering, and Distribution of Materials

At the present time, nine of the seventeen students whose records I saw tested on a first or second grade reading level, four on a third to early fourth grade level, and four on a fifth grade level or higher.

Despite such heavily weighted needs for early independent word indentification skill materials, those at the headquarters library consisted mainly of supplementary paperbacks suitable for independent reading by fairly

competent readers. Moreover, while student interest and comprehension needs were, fortunately, stressed, at least some of the tutors were not encouraged to try to offer structured phonics instruction of the kind that has been demonstrated to be effective with a considerable number of those with severe reading problems. Neither were materials for such instruction readily available. One tutor, in essence, "bootlegged" some phonics instruction, which seemed to work with that student.

The question of adequacy of instructional materials cannot be disassociated from that of the instructional guidance. Personnel is needed to ascertain the needs of students, communicate with tutors about student needs, interests, and aptitudes, and, keeping track of available materials, work out ways to get them to and from tutors as necessary. The books that are now housed at the Project headquarters may work well for those who can read them, but there should be a much greater variety and range from which tutors can draw. Moreover, books need not all be housed at headquarters. What is necessary is personnel that can be called upon to seek out books and other reading matter to help the tutors. The individual and group meetings mentioned above under Staff Development would be prime ways to learn about needed materials.

Scheduling of Sessions

The final recommendation, not related to additional personnel, is about the scheduling of tutorial sessions.

As noted above, those currently in the program expressed satisfaction with the once-a-week, two-hour sessions now being scheduled. The question arises, however, as to whether other scheduling formats might be tried and found suitable for those who are not now enrolled. For example, having two hours instead of one of released time from work might be attractive to those who have special home responsibilities or travel time difficulties.

Also, there might be experimentation with having two one-hour sessions a week rather than one two-hour session. For learning, in general, distributed practice has proved to be more effective than massed practice. Moreover, if a session in a once-a-week schedule is missed, there is a gap of two weeks between sessions--much too long for the early level readers who enrolled. Furthermore, the travel constraints of the volunteer literacy program model that has been used in setting up the schedule do not operate here. The convenience of the workplace, especially if both hours are worktime hours, makes greater frequency possible. Better, perhaps, to use the model of familiar types of dyad instruction (music or sports lessons, counselling, and many others), in which an hour or even less of intensive involvement has been chosen as the appropriate block of time. It is for group instruction, where there is less pressure on each individual student and where more time is

needed for each member of the group to talk, that longer periods of time are scheduled.

* * * * *

Conclusion

In sum, at this early stage of its existence, the Tutorial Component of Project REACH shows real promise as a literacy program that will promote the skills, attitudes, and contributions of a significant number of government employees. Given the support it appears to deserve, it should in time fulfill that promise.

4.3 AN ANALYSIS OF THE DATA COLLECTED FROM THE ONE-ON-ONE PROGRAM

As part of the evaluation of the One-on-One or Tutor-Tutee program, various measures were obtained from both the tutors and tutees.

Data analyses for the tutees appear first. In these analyses, the following information is presented:

(a) A descriptive analysis of the starting dates, the number of hours, and the number of sessions spent in the program by the tutors.

(b) A descriptive analysis of basic biographical data.

(c) A descriptive analysis of pre and post scores on the three scales of the READ test.

(d) A descriptive analysis of pre and post scores for the 40 items of the SKILLS profile.

(e) Qualitative data in the form of vignettes which describe the performance of individual students.

(e) A cost effectiveness analysis of the program.

Data for active students and dropouts are reported separately.

In the second section, the evaluation data for the tutors are presented.

4.3.1. Tutees

Data were available with respect to the dates when tutoring began, the number of hours of tutoring each student experienced, and the number of tutoring sessions. Secondly, all tutees were administered application and intake forms which provided basic biographical data. Thirdly, reading scores (word reasoning level, reading comprehension level, listening level) were available from the READ test. These

scores are presented in grade level equivalents. The levels range from the non reader level, to a grade level of 5.5 or higher. Fourthly, tutees were administered the SKILLS PROFILE, a 40 item self report questionnaire measuring the student's perceptions of their reading and writing skills. (This instrument was developed by CASE, [See Appendix B])

The biographical data were obtained prior to the tutoring sessions. The data on the READ test and the SKILLS Profile were obtained at two different times. Pre scores were obtained either prior to the tutoring sessions or shortly after the program began. The post scores were obtained after a student had been in the program for a minimum of four months.

The tutee sample that was analyzed consisted of 37 students. Although this number does not represent all of the students who had entered the program, it represents those for whom data were available at the time this report was written. The status of these students can be broken down as follows:

Status	N
Active	24
Dropout	8
Postponed	4
Unofficial	1

The analyses to be presented in the next section (4.3.1.1) were confined to the 24 active students. In some of these analyses the reported sample size is less than 24 due to missing data. In the second section (4.3.1.2), data are reported for the dropouts.

4.3.1.1 The Active Tutees

Table 1 displays data for the starting dates for the tutoring sessions. Table 2 below presents frequency data for the total number of hours of participation in the program during 1987. Table 3 presents data on the number of tutoring sessions. The data in Tables 2 and 3 were obtained from data verification forms filled out by the tutors.

Table 1. Month in which the tutoring began (1987)

Month	frequency	percentage
January	2	9.5
May	2	9.5
June	3	14.3
July	1	4.8
August	2	9.5
September	2	9.5
October	3	14.3
November	1	4.8
December	5	23.8

Table 2 The frequency distribution of the number of hours of participation in the REACH program

Number of hours	Percentage
0	33.3
1	4.2
5	4.2
6	8.3
14	4.2
18	4.2
24	4.2
25	4.2
26	4.2
36	4.2
40	4.2
42	4.2
44	4.2
46	8.3
101	4.2

Table 3. Frequency distribution of the number of tutor-tutee sessions

number of sessions	percentage
0	33.3
1	4.2
3	8.3
4	4.2
5	4.2
9	4.2
10	4.2
12	4.2
13	4.2
15	4.2
18	4.2
20	4.2
21	4.2
23	8.3
24	4.2
53	4.2

It should be noted that the tutees who have zero hours and zero sessions had just begun the program at the time of the present analysis. Further, the median number of hours of participation is approximately 14, and the median number of sessions is approximately 9.

Tables 4-11 provide frequency distributions and in some cases the means and standard deviations for the basic biographical data obtained from the application and intake forms. Data are reported for specific questions asked of applicants.

Table 4. Does the tutee have a hearing problem?

Response	frequency	percentage
yes	1	4.3
no	22	95.7

Table 5. Does the tutee have visual problems?

Response	frequency	percentage
yes	1	4.3
no	22	95.7

Table 6. Does the tutee have speech problems?

Response	frequency	percentage
yes	3	13.0
no	20	87.0

Table 7. Is English your primary language?

Response	frequency	percentage
yes	19	79.2
no	5	20.8

Table 8. Are you currently enrolled in any additional adult education courses?

Response	frequency	percentage
yes	1	4.3
no	22	95.7

Table 9. Have you been enrolled in any additional adult education courses in the past?

Response	frequency	percentage
yes	13	56.5
no	10	43.5

Table 10. Sex

Response	frequency	percentage
Male	13	54.2
Female	11	45.8

Table 11. Education Level

Grade	frequency	percentage
1-5	6	25.0
6	1	4.2
7	2	8.3
8	2	8.3
10	2	8.3
11	3	12.5
12	8	33.3

Background data can be summarized in the following way:

* For all but two of the students, tutoring did not begin until May of 1987.

* The tutee group is basically free of any hearing, visual, or speech problems.

* English is the primary language for 79 percent of the students.

* Virtually none of the tutees are currently enrolled in any other adult education courses. However, more than half of the tutees report having taken adult education courses in the past.

* The majority of students are male.

* As might be expected, the educational level of the group is low. For example, approximately one third of the students have educational levels at or below the seventh grade. Although not reported in the tables, none of the students has any postsecondary high school education.

Tables 12, 13, and 14 present frequency distributions for the pre and post test scores on the READ test. The pre scores are based on the responses of Npre = 24 students, while the post scores are based on the responses of Npost = 13 students.

Table 12. Word Reasoning Level (Pre and Post Scores)
(Npre = 24 Npost = 13)

Grade Level	Pre Percentage	Post Percentage
non reader	16.7	15.4
up to grade 1.5	12.5	7.7
1.6-2.0	4.2	30.8
2.1-2.5	12.5	
2.6-3.0	4.2	7.7
3.1-3.5	8.3	
3.6-4.0	8.3	15.4
4.1-4.5	4.2	7.7
4.6-5.0		
5.1-5.5	29.2	15.4

Table 13. Reading Comprehension level (Pre and Post Scores)
(Npre = 24 Npost = 13)

Grade Level	Pre Percentage	Post Percentage
non reader	4.2	
up to grade 1.5	12.5	15.4
1.6-2.0	12.5	15.4
2.1-2.5	4.2	23.1
2.6-3.0	8.3	7.7
3.1-3.5	8.3	7.7
3.6-4.0		7.7
4.1-4.5	8.3	7.7
4.6 4.5	20.8	
5.1-5.5	20.8	15.4

Table 14. Listening level (Pre and Post Scores)
(Npre = 24 Npost = 13)

Grade Level	Pre Percentage	Post Percentage
up to grade 1.5	12.5	
1.6-2.0	4.2	
2.1-2.5	12.5	
2.6-3.0	4.2	7.7
3.1-3.5	12.5	7.7
3.6-4.0	4.2	
4.1-4.5	8.3	
4.6-5.0	12.5	
5.1-5.5	29.2	84.6

Tables 11-14 show that the initial reading level of the active group was relatively low. The median word reasoning, reading comprehension, and listening levels were approximately, 2.6-3.0, 3.1-3.5, and 3.6-4.0 respectively. An examination of the post score distributions for the three

scales suggests that there is a decrease in performance for word reasoning and reading comprehension, but an increase for listening level. This result can be seen in two ways. If one considers the post score medians, the resulting values are approximately 1.6-3.0, 2.1-2.5, and 4.6-5.0. A comparison of these medians with the corresponding pre score values shows decreased medians for word reasoning and reading comprehension, and an increase for listening level. One can also consider the pre-post changes by rescaling the scores on the reading test as a continuous measure and then considering the pre and post means. More specifically, one can assign a value of 1 for the non reader level, a value of 2 for a reading level of up to grade 1.5, a value of 3 for a grade level from 1.6 to 2.0, and so on until the highest level of grade 5.1-5.5 is assigned a value of 10. The pre score means for the three scales of the READ test are then 5.82, 6.64 and 7.04. The corresponding post score means are 4.85, 5.23, and 9.31 respectively.

It is difficult to interpret the meaning of these gains and losses in READ scores because of two factors. First, in some cases, the number of months a student was in the program was as little as four months. It is possible that the post score performance would have been different if a longer time period was considered. Unfortunately, the program evaluation deadlines necessitated the four month criterion. Secondly, the use of the four month criterion, as well as student withdrawals from the program, led to the elimination of approximately 50 percent of the students who took the pre test.

It is clear that this loss of subjects can affect any pre-post comparison of the READ scores. For example, one can consider a pre-post comparison using only those subjects for whom both pre and post scores are available. If the reading scores are scaled as a continuous measure, the pre and post means as well as the average gain (post-pre) are given in Table 15 below.

Table 15. Pre and Post READ MEANS
(Students taking both the pre and post tests, n=13)*

	Pre Mean	Post Mean	Average Gain	SDEV
Word Reasoning	3.92	4.85	.92	5.31
Reading Comprehension	5.31	5.31	0.00	3.72
Listening	6.00	9.31	3.31	3.61

* Means are reported in terms of a transformed reading score, rather than as a grade level score.

The results given in Table 15 present a much more favorable view of the effect of the program than is given by the previously described analyses of all of the data. Not

only is there now a positive gain for listening, but also for word reasoning. There is no pre-post change for the reading comprehension scale.

In conclusion, it is clear that the problem of missing data makes it difficult to reach any firm conclusion concerning the effect of the One-on-One program with respect to the scores on the READ test. It should further be noted, that the very small sample sizes make the usefulness of further statistical analyses, in the form of significance testing, of dubious value.

Pre and Post responses to the 40 questions of the SKILLS Profile are given in Table 16. In almost all cases, the pre data were obtained shortly after tutoring began. The post scores were obtained after the students had been in the program a minimum of four months. It should be noted that the pre score responses were available for Npre = 16 of the active tutees. The post scores were obtained from Npost = 12 students.

Table 16. Pre and Post Responses to the SKILLS profile. (Npre = 17 Npost = 12)

Question	Pre %yes	Post %yes
(1) I have the writing and reading skills I need.	0.0	16.7
(2) I can recognize all the letters of the alphabet.	100.0	100.0
(3) I would feel more self-confident if I could improve my reading and writing skills.	100.0	91.7
(4) My job requires some reading.	82.4	75.0
(5) My job requires some writing.	58.8	83.3
(6) I have problems with spelling.	94.1	83.3
(7) I have problems expressing my ideas when I talk.	47.1	66.7
(8) I have difficulty expressing myself in writing.	94.1	75.0
(9) I have problems reading aloud.	82.4	33.3
(10) I have tried to develop my reading skills by myself.	94.1	83.3

(11)	I think I can improve my reading and writing skills through this program.	100.0	100.0
(12)	I read at home.	82.4	91.7
(13)	I can read newspapers.	70.6	66.7
(14)	I can read magazines.	64.7	66.7
(15)	I can read labels	88.2	91.7
(16)	I can read novels and short stories.	58.8	66.7
(17)	I write shopping lists.	41.2	66.7
(18)	I write notes to myself.	41.2	33.3
(19)	I write my thoughts and feelings.	5.9	41.7
(20)	I have problems reading numbers.	11.8	16.7
(21)	I like to talk about what I read.	76.5	100.0
(22)	I have difficulty reading menus.	47.1	41.7
(23)	I have difficulty reading maps.	58.8	91.7
(24)	I have difficulty reading job instructions.	47.1	33.3
(25)	I have difficulty reading street signs.	17.6	16.7
(26)	I think there are some important things I miss out on because of my reading level.	88.2	91.7
(27)	It is difficult for me to fill out forms.	76.5	91.7
(28)	I find employment applications confusing.	64.7	66.7
(29)	I have problems writing checks or money orders.	58.8	33.3
(30)	I feel sorry for myself because of my reading skills.	64.7	50.0

(31) I am embarrassed at times because of my reading level.	76.5	75.0
(32) I can read from the Bible.	58.8	75.0
(33) I vote.	76.5	83.3
(34) I can read election ballots.	41.2	75.0
(35) I consider myself a capable worker.	100.0	100.0
(36) I can read the contents on cans and packages.	82.4	91.7

	Pre		Post	
	mean	std.	mean	std.
(37) Number of hours of reading each week	5.5	3.2	4.4	2.4
(38) Number of hours writing per week.	3.6	2.6	3.1	1.9
(39) Number of hours of TV per week.	15.3	11.9	12.2	10.9
(40) Number of hours in REACH program per week	3.8	1.6	4.6	2.2

The pre score responses to the SKILLS Profile can be characterized in the following manner:

* The tutees express a strong need for improving their reading and writing skills. (items 1, 6, 8, 9, 10, 26, 30, 31)

* Although the majority of students report being able to read more casual or non-job related material (e.g. magazines, labels, novels and short stories, menus, street signs, the Bible), the majority report difficulty with the reading of job related or performance oriented materials (application forms, checks or money orders, spelling, election ballots, maps) The only exception to this statement occurs for item 24, where the majority (53 percent) of the students report that they can read job instructions.

* It should be noted that even for those reading and writing skills for which a majority report no difficulty, a sizeable percentage of students still report difficulties. For example, for item 13, approximately one third of the students cannot read newspapers.

* Students report that they spend relatively few hours reading and writing. The average number of hours of reading per week is 5.5 hours, while the average value for writing is 3.6 hours. In addition the average number of weekly TV viewing hours is 15.3. Furthermore, students report that the average number of hours spent weekly in the REACH program is 3.8.

An analysis of the post score responses showed that there were relatively large pre-post changes with respect to a number of variables. Positive gains of approximately 15 percentage points or greater were reported with respect to the following variables: having needed reading and writing skills (item 1), expressing ideas in writing (item 8), reading aloud (item 9), writing shopping lists (item 17), writing thoughts and feelings (item 19), talking about what is read (item 21), reading job instructions (item 24), writing checks and money orders (item 29), feeling sorry for oneself (item 30), reading the Bible (item 32) and reading election ballots (item 34). A larger proportion of students also report that their job requires writing skills (item 5). In addition, the drop in the number of hours of TV viewing from 15.3 to 12.2 can be viewed as a positive finding. On the negative side, students reported greater difficulty with the following variables: expressing ideas verbally (item 7) and filling out forms (item 27). Although the sample sizes are too small for a rigorous statistical analysis, the results given above definitely suggest that there were some positive gains from the tutoring.

4.3.1.2 Vignettes

Brief descriptive vignettes of student participation in Project Reach sites were written by the program coordinators. Students entered the Project REACH program with a wide variety of goals and prior skills. Many students reported their intention to improve their reading and the possibility of taking civil service examinations allowing them to take new and often higher paying jobs. Many students reported a general improvement in their ability to function in society through their increased ability to perform tasks requiring increased facility with language skills. Students found that they gained facility in writing checks, reading maps, taking driving tests, applying for citizenship papers, better speech, reading

labels and signs, reading to children as well as higher degrees of involvement and functioning at work tasks.

Below are two vignettes typifying the experiences of students in the tutorial program of Project REACH.

"J" applied for Project REACH in April, 1987, with the goal of learning to write better and prepare herself to take accounting courses. Originally very reluctant to write for her tutor "J" now keeps a journal and writes without hesitation for her tutor. Because of her newly acquired writing confidence, "J" can at times help her eight-year old son with his homework and can leave hand-written messages for her children. In addition, "J" is now a Girl Scout Leader, something she has always wanted to do but shied away from because of the writing it requires. With respect to work, "J" has taken steps to take Civil Service promotional exams for office worker, and is considering adult education courses for her own interest.

"A" applied to Project REACH in May 1987, with a desire to prepare for a license exams so that he can get a better job. Though "A" continues to prepare for the exam and still lacks the confidence to take it, REACH has created other opportunities for him. For the first time in his life, "A" was able to write a letter to his father and his girl friend expressing his feelings for them. He, on his own initiative, bought a dictionary and regularly uses it to learn new words now that he can both find the word and understand the definition. Whereas he used to read only the sports pages of the newspaper, he can now read other articles and follow the political campaign. At work as well, "A" is now able to assist his supervisor in preparing time cards. Though the role is not a formal position and offers no pay increment, it does afford him the opportunity at succeeding in assuming greater responsibilities, and that has been a source of pride to him.

4.3.1.3 The Dropouts

Biographical data as well as initial or pre-scores on the READ test were available for the 8 dropouts. The background data for this group are presented in Table 17. It should be noted that results are reported only for those variables where dropouts show differences as compared to the active group.

Table 17 Summarization of Dropout Data

(a) percentage for which English is the primary language	75.0
(b) percentage male	75.0

(c) educational level	grade 1-5	25.0%
	6	12.5
	7	12.5
	9	12.5
	10	12.5
	11	12.5
	12	12.5
(d) word reasoning level	up to grade 1.5	12.5%
	2.1-2.5	12.5
	3.1-3.5	12.5
	5.1-5.5	62.5
(e) reading comprehension level	non-reader	12.5
	up to grade 1.5	12.5
	4.1-4.5	12.5
	5.5-5.5	62.5
(f) listening level	non-reader	12.5
	up to grade 1.5	12.5
	4.1-4.5	12.5
	4.6-5.0	12.5
	5.5-5.5	50.0

The differences between the active and dropout groups can be summarized as follows:

* a smaller proportion of the dropouts have English as their primary language.

* a greater proportion of the dropouts are male.

* The dropouts tend to have a lower educational level than the active group. The median level for the dropouts is grade 7, while the median for the active students is grade 10.

* The dropouts tend to score higher than the active students on each of the three subtests of the READ test. At least half of the dropouts score at the highest level on each of the subtests.

It should be noted that the small number of dropouts does not allow for any statistical investigation of the significance of the differences between dropouts and active students.

4.3.2 The Tutors

Upon completion of the tutor training workshop, the tutors were asked to respond to ten questions which attempted to evaluate the "quality" of the training. Data were collected from four different training sessions in April and June of 1987, and February and March of 1988. The percentage responses to the ten items for both training sessions combined are given in Table 18 below. Responses are on a six-point ranking scale where 1 is the lowest and 6 is the highest. The number of tutors responding to questions 1-4 is n=50, and the sample size for the remaining questions is n=25.

Table 18 The evaluation of tutor training in terms of percentage responses

(1) Do you feel you are familiar with the materials in your trainee's kit?

Rank	Percentage
6	40
5	40
4	18
3	2

(2) Do you feel the workshop has given you an additional sensitivity to the people you will be working with?

Rank	Percentage
6	38
5	42
4	8
3	8
2	4

(3) Do you feel you have understood the techniques given in the workshop?

Rank	Percentage
6	38
5	42
4	14
3	6
2	4

(4) Do you feel comfortable in being able to use the techniques realizing it will take actual practice to be really competent?

Rank	Percentage
6	30
5	26
4	30
3	14

(5) Do you feel the format (tape presentations and live demonstrations) was helpful?

Rank	Percentage
6	32
5	44
4	8
3	8
2	8

(6) Do you feel you have an understanding of the levels of materials available through Project REACH?

Rank	Percentage
6	32
5	48
4	16
1	4

(7) Do you feel you have an adequate grasp of the contents of the workshop?

Rank	Percentage
6	24
5	52
4	12
3	12

(8) The pace of the workshop was

Response	Percentage
Too fast	20
Too slow	4
Just right	76

(9) The homework assignments were

Response	Percentage
Helpful	88
Not helpful	8
Too much	4

(10) The case histories were

Response	Percentage
Helpful	88
Not pertinent	0
Good	12

It is clear from an inspection of the percentages in Table 18 that the tutors rated the training to be highly useful.

4.3.3 Cost Effectiveness

To measure the cost effectiveness of any program, one must have the following information: (1) A measure of the average gain in performance attributable to the program; (2) A measure of the cost of the program in dollars; (3) Knowledge of the number of students participating in the program. Using this information, the computation of the cost effectiveness is a three stage process:

(a) Divide the total cost of the program by the number of participating students. This value represents the cost per student.

(b) Divide the standardized average gain (average post-score minus average pre-score divided by the standard deviation of the difference scores) by the cost per student.

(c) Multiply the number obtained in (b) by a factor of 100. This number represents the cost effectiveness as the average gain in reading level for an expenditure of $100.00.

Although this model can be applied to the current One-on-One component of the REACH program, the meaningfulness of this analysis is questionable at the present time. The biggest drawback is the lack of a reliable data base for accurately assessing gains in reading. As previously noted, there are large amounts of missing data. In addition, since the program is still in its earliest stages, the number of participating students is relatively low. Consequently, if one were to use the current number of active students, the cost per student factor would most likely be overestimated. For all of these reasons, no cost effectiveness analysis will be presented at the present time.

4.4 RECRUITMENT REVIEW AND EVALUATION

To determine the effectiveness of the procedures and materials used to attract students and tutors, two members of the Evaluation Team made a site visit to Albany on January 27, 1988 to determine the effectiveness of the procedures and materials used to attract students and tutors into the One-to-One tutoring component.

By pre-arranged plan, the Evaluation Team followed a schedule set up by GOER personnel in order to provide for meetings with tutors, tutees, union representatives, and agency directors. Methodology for these sessions included direct questioning and spontaneous interaction during individual interviews, dyads, and quasi-focus groups of six and fourteen.

Each individual and group, prior to the presentation by the Evaluation Team, was shown the recruitment TV cassette, as well as posters, bookmarks, and other promotional materials.

The sessions proceeded as follows:

* Brief introduction to explain the purpose of the questions to be raised. Emphasis was on assessment of effectiveness of recruitment and public relations activities related to Project REACH's tutor/tutee program.

* A questioning period, which provided for interaction, raised these issues.

4.4.1 What do you see as the strengths and weaknesses of the advertising methods used by the REACH program?

4.4.1.1 What do you see as the strengths and weaknesses of the video film? How could it be improved? How often should it be shown?

4.4.1.2 What do you see as the strengths and weaknesses of the posters? Why did they attract your attention? What information did they convey about the REACH program? How could the physical layout be improved?

4.4.1.3 In addition to films and posters, what other advertising methods could be used to attract students and tutors?

4.4.2 Why do you feel that more students have not enrolled?

4.4.3 What are your general recommendations for improving advertising for the program?

4.4.4 What other reading improvement programs do you know about? How is this program different?

Throughout the day, a total of 25 individuals were questioned, consisting of:

14 potential tutors from many agencies;
6 potential tutees from clerical staff;
3 union representatives, and
2 agency directors.

Based on all interviews and discussions, the following findings resulted:

Question 4.4.1.1 What do you see as the strengths and weaknesses of the video film? How could it be improved? How often should it be shown?

STRENGTHS

"communicates about Project REACH;" "good presentation;" "shows people with the same problem who want to improve their skills;" "effective;" "promotes program awareness;" "clear;" "showed interested program people;" "comprehensive;" "short and to the point;" "shows job diversity regarding need;" "easy to understand;" "useful with other materials;" "Provided for next step - telephone contact;" "presenters seemed sincere;" "touches on real issues;" "useful communication device;" "different ethnic groups shown;" "good setting - Civil Service booth;" "pitched to those who want to read better;" "makes problem acceptable"

WEAKNESSES

"seemed too rehearsed"
"no eye contact"
"different levels of reading should be stressed"
"should show older workers too"
"should show cross section of jobs"
"doesn't mention psychological roadblocks"
"doesn't mention privacy issue"

IMPROVEMENTS

"should be shown at agency meetings"
"should be shown on the Concourse at 'break time'"
"maybe should be shown on public shots for TV"
"show more frequently - visit agencies more than once"

Questions 4.4.1.2 What do you see as the strengths and weaknesses of the posters? Why did they attract your attention? What information did they convey about the REACH program? How could the physical layout be improved?

STRENGTHS

"picture good with familiar symbols;" "brief message;"
"good because simple message;"
"colors good"

"attractive design"
"catches the eye"
"uncluttered"
"gave the message needed"
"supplied followup information - telephone contact"
"I like the design, colors, size, and layout"
"no extraneous details"
"appeals to non-readers"

WEAKNESSES/IMPROVEMENTS

"should be posted in the rest rooms near the mirrors"
"use for posting at the time clock"
"should be distributed to all offices"
"put a notice in each pay check using poster idea"
"put on every bulletin board"
"better colors needed, such as green/white like the public library"
"have a CSEA mailing with poster-like materials"
"if a person can't read,the posters alone won't help"
"should be changed from time to time"

Question 4.4.1.3 In addition to films and posters, what other advertising methods could be used to attract students and tutors?

"use the radio and TV stations to provide free public messages"
"find ways to reach workers on night shift - daytime TV, for example"
"contact media regarding public service spots"
"use State newsletters more"
"advertise in local papers"
"get media to do human interest stories"
"use word-of-mouth advertising"
"show at union meetings"
"designate a liaison person for each agency to facilitate recruitment"

Question 4.4.2 Why do you feel that more students have not enrolled?

"program not known to them"
"difficult to identify yourself as a poor reader"
"lack of trust that the student's reading problem will be kept private"
"publicity doesn't mention that release time can be avoided, thereby making the arrangement private"
"people have home problems"
"it's a big step"
"some agencies don't know about it"
"worried about confidentiality - publicity should discuss this issue"
"non-readers use tremendous coping mechanisms - often can't admit deficits to themselves"
"programs like these set their own levels of participation"

"reticence based on English-language deficits, for example, Hispanics (NYC), Haitians (Rockland), Italians (Albany)"
"can't overcome feelings of shame"
"too much time spent with television"
"tired from other responsibilities"

Question 4.4.3 What are your general recommendations for improving advertising for the program?

"set up tables in the foyer"
"include in agency orientation of new employees"
"include in supervisory training"
"bring in former or successful students to speak about the program"
"tie in publicity with accident-avoiding theme"
"change colors - yellow means 'caution'"
"show figures who are obviously adults, doing family-oriented things"
"bring in a design consultant"
"stress perks to be attained - better job, improved parenting skills, new horizons opening"
"get brainstormed ideas from a team of psychologists"
"use data from reading specialists"
"stress the 'you're not alone' aspect"
"emphasize how your life can be changed"
"find other settings for publicity - the lunchrooms, for example"

Question 4.4.4 What other reading improvement programs do you know about? How is this program different?

"PLUS"
"RIF"
"Schenectady 20"
"Albany Public"
"LVA"
"program's different because it's local"
"easily accessible"
"gives release time"
"backed by union"
"uses fellow employees"
"provide for one-to-one tutoring"
"individualized instruction"
"materials tailor-made and determined by student's motivation"
"works closely with CSEA personnel"
"tutors seem special"
"strong commitment on part of GOER staff and tutors"
"tutors are co-workers and friends"
"it's free"

The findings on Project REACH's public relations efforts indicate a generally positive evaluation on the part of tutors, tutees, union representatives, and agency directors. Participants in both individual interviews and quasi-focus groups offered cogent and incisive criticism.

Union representatives in large measure found the publicity effective as well as visible throughout numerous agencies. They saw a need for confidentiality as a core issue, because potential students may want to keep their reading deficits private. Responses of agency representatives and clerical staff responses to the publicity drive generally included discussion of the need for increased visibility through utilization of newspapers, newsletters and public service slots on radio and television. Emphasis was placed on the value of Project REACH's use of release time, the person factor of tutor dyad interaction and the cost free nature of the program.

The use of posters was perceived by agency representatives and clerical staff as being primarily directed to and effective in recruiting tutors. For the most part, posters were not considered to have had a maximum effect in appealing to prospective students due to their language skills level and because of a certain degree of ambiguity in the color and design of the logo and symbols. Union representatives saw a need for listing names of agency personnel and contact numbers on the posters.

Among some of the other observations and concerns were the questions of whether the program would appeal to the lowest-level readers, the need for a sustained public service slot publicity campaign that would also take into account the need to reach night workers, and the issue of providing bilingual tutoring and ESL classes.

Most of the tutors were satisfied with the video presentation to prospective students. There was some perceived need for a greater variety of people to be presented in a number of vignettes reflecting diverse backgrounds, ages and skills. There was concern for the limited cross-section of jobs depicted in the video. This criticism focused on the issue that the program should attempt to appeal to a wide variety of jobs and not be restricted only to recruitment among office workers. In summary, the suggestions made about where to show the video, place posters, and other recommendations for advertising should be reviewed by GOER staff to determine next steps based on their close and personal knowledge of the tutoring program.

4.5 Summary and Findings (One on One Program)

The One on One component was evaluated in terms of site visits by a reading specialist and evaluation team members, the collection of pre- and post- test data for tutees, the analysis of questionnaire data obtained from the tutors, and an analysis of the recruitment procedures used in attracting participants to the program. The findings for each of these evaluation components is as follows:

Specialist's Report and Site Visits

Both the Specialist's Report and the Site Visit Writeups validated Project REACH's tutoring component as

responsive to pervasive and urgent needs to improve literacy skills among New York State government workers. All evaluation team members were impressed with the component's potential for enhancing workplace literacy.

Pre and Post Data

The three scales of the READ test, as well as the 40 item self report SKILLS PROFILE were administered as pre and post measures. The analysis of these data is complicated by relatively large numbers of missing data for the post measures. If one considers only those students for whom both pre and post scores are available, gains in the word reasoning and listening scales of the READ test are evidenced. Positive findings are also found for certain reading and writing skills measured by items of the SKILLS Profile.

Tutor Training

Upon completion of the tutor training workshops, the tutors were administered a questionnaire measuring the perceived quality of the training. The responses of the tutors showed that they found the training to be highly useful. Athough these data indicate that tutors viewed "training" as successful, what they were given was an "orientation" to the literacy skills component of the program. Dr. Miriam Balmuth, reading/literacy skills expert, and adult education specialist, made a strong recommendataion (page 14) for ongoing and comprehensive staff deveolpment and training that would build on this initial orientation tutors received. Project REACH adminstrators should give the recommendation great consideration.

Recruitment Procedures

Data on the effectiveness of the recruitment and advertising procedures were obtained by interviews with tutors, tutees, union representatives, and agency directors. The findings of these interviews indicate a generally positive evaluation of the recruitment and advertising procedures.

5. PALS (PRINCIPLE OF THE ALPHABET LITERACY SYSTEM): COMPUTER INTERACTIVE TRAINING LAB

5.1 Overview

Emerson (1987) supplied background for the PALS program in a recent article as follows:

> Kindergarten and elementary school personnel across the nation know and love 'Writing to Read,' which resulted from the first collaboration between Dr. John Henry Martin and International Business Machines Corp. More than 300,000 youngsters have gained reading and writing skills using the computer assisted instruction program.
>
> Now, Martin and IBM seek to address those who need similar help but who are beyond Writing to Read's purview. They've teamed up again, this time with a product targeting illiteracy among adolescents and adults - generally perceived as one of the nation's greatest problems, with an estimated 25 million or more people unable to read and write well enough to function in our society. (p. 9)

Although Emerson's estimate of those in need of help gives yet another figure, probably due to differences in conceptualizations and semantics about literacy, as well as variations in calculation methodology, there is consensus among all estimators that the problem is large and serious.

In September 1986, IBM introduced the result of its work with Martin, a computer-videodisc interactive program, known as PALS, designed to teach adults who read at or below the sixth-grade level. Atlanta, Georgia, the home of IBM's Educational Systems Division, uses a PALS pilot lab in an adult basic education center, where the target population is a varied one consisting of high school students, city employees, and adult citizens. Mayor Andrew Young was enthusiastic about the program when he said that it "offers real hope in the city's battle against social and economic problems." (p. 10)

The Teacher's Manual for the Principle of the Alphabet Literacy System (PALS) written by Dr. John Henry Martin (1987), provided the following overview:

> The Principle of the Alphabet Literacy System is a research-based, interactive instructional system. It is a writing and reading system designed to teach

> functionally illiterate adolescents and adults through the use of the advanced technology of the IBM InfoWindow system and interactive videodiscs. A student Work Journal reinforces the audio and visual learning of the videodiscs. The program also utilizes IBM word processors and typewriters for touch typing training and for work and sentence composition. (page v)

Much of Martin's earlier Writing to Read program's techniques are employed, allowing students to learn words phonetically, sounding them out before using them in sentences. PALS, presented in colorfully-illustrated comic book fashion on InfoWindow, tells a story about the invention of reading and writing in the mythical kingdoms of King Alpha and Queen Bet. The fable shows how the two kingdoms almost get into armed conflict, because of inability to communicate in a written language; thereby, illustrating need for precise communication and demonstrating relationships among images, sounds and ideas. After the fable conveys the relationships between sounds and letters, students are ultimately asked to type the words spoken by the system.

Students in PALS Labs spend half of each one-hour class working with the videodisc course and half using word processing programs on PCjrs or working on typewriters, thus combining touch typing and computer skills, as well as reading and writing.

A typical IBM literacy lab consists of multiple personal computers, IBM InfoWindow systems (which enable students to use computers by touching their screens), and videodisc players containing the instructional audio/visual materials. A lab can accommodate up to 16 students an hour, or about 150 students during the 20-week duration of a literacy course.

Table of Contents pages from Dr. Martin's PALS Teacher's Manual are shown in Appendix D to give the breadth and scope of this literacy skills system.

The GOER PALS program component of Project REACH was equipped to operate in eight centers throughout New York State: Kings Park Psychiatric Center, Pilgrim Psychiatric Center, Creedmoor Psychiatric Center, Hudson River Psychiatric Center, Broome Developmental Center, Brooklyn Developmental Center, Letchworth Village Developmental Center, and Wassaic Developmental Center. Six of the eight centers operated their labs out of the Education and Training Offices.

5.2 Site Visit and Specialist's Report

5.2.1 Brooklyn Developmental Center

Because CASE was given information that the PALS lab in the Brooklyn Developmental Center became operational before the others, members of the Evaluation Team made a site visit on January 25, 1988 to become acquainted with the coordinator and his staff, and to develop a prototype for data collection at one or more other sites.

Based on activities seen at the January 25th site visit, where CASE evaluation staff members observed a PALS lab in session, talked informally with several students at work on the computer, and attended a staff meeting, it seemed apparent that students were motivated to learn, were following the instructional materials, were using touch typing techniques to operate the computer keyboard, and were making progress reports in their logs.

During the staff meeting discussion which followed, there was agreement upon CASE's data needs, in order to document an effective program, which would be met if the Brooklyn Developmental Center agreed to supply the following information:

* TABE reading scores for participants at the beginning; that is, prior to using the PALS system;
* Skills Profile (copy appears in Appendix B) to assess participants' feelings about and habits related to reading skills;
* Checklist to obtain identifying data about participants if no application was used for program entry (copy appears in Appendix C), and
* Vignettes related to human interest items which express participants' motivations, observed changes, and "successes" as a result of entry to a literacy skills program.

Whenever the need for data was mentioned for the purposes of evaluating, assessing, and documenting program effectiveness, assurances were made that the utmost care and regard for participant privacy, confidentiality, and anonymity would always operate.

The model for data collection, developed with the Brooklyn Developmental Center, described above, was outlined subsequently to coordinators at two other operational sites: Kings Park and Pilgrim.

On February 4, 1988, the Brooklyn Developmental Center presented a Grand Opening reception for their PALS laboratory. Representatives of various governmental, church and civic associations, as well as union representatives and educators, were in attendance. A member of the CASE Evaluation Team attended this dedication ceremony.

The PALS Laboratory Coordinator and several instructors demonstrated the PALS system. Both the typing and the

interactive videodisc aspects of the laboratory were shown in operation. Discussion and questions were encouraged. Union reporters and photographers, primarily representative of mental health workers, prepared reports for their newsletters and publications. A representative of IBM's educational software division was present.

In discussion with several instructors some criteria of the program were discussed in detail. The applicability of the videodisc to adult students and the twenty-week cycle were considered. Technical problems of synchronizing the voice and video aspects of the discs were raised. Attendance and tutor logs as well as testing materials were inspected. The need for follow-up materials and continuity were brought up, particularly the question of workplace literacy skills not introduced by use of the PALS system. The use of writing of student autobiographies and letters was considered for the later part of the cycle.

This reception accomplished many positive goals related to public relations, publicity, networking, information dissemination, and issue recognition.

5.2.2 Site Visits - Kings Park Psychiatric Center and Pilgrim Psychiatric Center

CASE Evaluation Team members, accompanied by a PALS specialist, (Dr. Trudy Abramson) made site visits to PALS labs located at Kings Park Psychiatric Center and at Pilgrim Psychiatric Center on April 27 and April 28, 1988 respectively. Dr. Trudy Abramson's May 1988 findings and recommendations follow.

OBSERVATION OF PALS SITE AT KINGS PARK PSYCHIATRIC CENTER

THE PHYSICAL ENVIRONMENT

Kings Park Psychiatric PALS Lab is a "half-lab" located in the computer center of the complex. It is a self-contained, newly furnished, well lit room. There are two typewriter stations with dictaphones, earphones and document stands at each. At the opposite side of the room are four computer systems in two groups with each group sharing a printer. Facing the entrance are two highly sophisticated computer systems each with voice output and touch screens, hooked to individual laser disk drives and three sets of earphones and two seats at each system. Opposite these systems is a teacher's desk. In the center of the room there is a round table with four armchairs and a floral centerpiece. All the chairs in the room are ergonomically sound and are on wheels. Two posters are in view: Principles of Alphabet Literacy System and Phonemic Chart. In addition, there is a vertical file cabinet to hold library materials available to the participants. (The library material disappeared in transit and at this visit, the shelves were bare.) The lab totally conforms to the description in the PALS manual.

The class observed had eight students enrolled, a full component for a half-lab, and all were present for the

entire 90-minute session. This class has been in session since the end of January 1988 and all students had completed the Invention of the Alphabet, disks 1-6. One student, who was being "recycled," was on the laser system during the first half of the session.

During the first 45 minutes, the four computer/printer systems were being used for various typing experiences and writing. The remaining student worked at the round table composing a biographical story. During the second 45 minutes, three students were engaged in paper and pencil story writing that is the activity preliminary to saving it on audio tape and one of the computer/printer stations was unused.

TEACHERS

The two people who received the training and were responsible for the lab were present during the second half of the session. One person worked alone for the most of the first half; he explained that as much as possible both teachers work in tandem during the class sessions.

TEACHER ACTIVITIES

The teachers helped each student find an appropriate "niche" upon arrival at the class and again after 45 minutes when the activities were changed. At this point in the term, the students had mastered all the nuances of communication and were able to handle the hardware and software independently. The teachers circulated constantly offering encouragement and praise and responded almost immediately to all student requests. Most of these requests were for clarification rather than for assistance. It was evident that the teachers were extremely competent and sensitive to the needs of the students. In addition, a great deal of organization and planning could be seen from the smooth flow of the individualized instruction.

STUDENT PERFORMANCE

At this time, there were no problems with the hardware. There had been problems earlier in the semester, but the teachers reported that IBM provided timely and effective assistance. As noted above, the students were very comfortable with the hardware and software. Although the students had been assigned "partners" for the viewing part of the experience, at this meeting, communication was visible between only one "partnership." The other six students worked pretty much as individuals. All the students appeared able to read and follow the directions provided by the system.

TEACHER TRAINING

The teachers were trained by IBM at a two-day seminar in Syracuse, New York. They reported that the training had been very intensive and that much of what was covered had to be experienced to be meaningful. They also reported that

ongoing help is available from Project REACH staff in Albany.

STUDENTS' REACTIONS

All the students indicated that the program is improving their reading and writing skills. However, these positive, self-assessments lacked confidence. Each of the students was much more eager to report upon the pleasure of learning to touch type, a skill regarded as a step up in society. None of the students in this group felt that reading and writing were essential components of their present job duties or, at least, that poor reading and writing skills hampered the execution of their duties. The motivating elements for participation were self-improvement and personal growth. Two physical changes were suggested by the students: pictures that appear faster on the screen and more typewriter stations. One change in content was suggested: real spelling instead of phonemic spelling.

TEACHERS REACTIONS

The teachers reported that the program appears to have a great deal of potential for improving the reading and writing skills of adults. They indicated the need for more typing stations and a quiet place for dictation of stories. In addition, they were disappointed that the "library" was lost in transit and had requested a replacement package from Albany. They felt that the number of meetings, three times weekly for 90 minutes, was adequate and reported that attendance has been very good. The pre-test results were used to eliminate students who self-selected to attend but whose scores were too high. In addition, working partners were assigned based upon pre-test scores. At this point, post-tests had not been administered but both teachers felt that the instruments were insufficiently refined for meaningful evaluation of the program.

OBSERVATION OF PALS SITE AT PILGRIM PSYCHIATRIC CENTER

THE PHYSICAL ENVIRONMENT

Pilgrim Psychiatric PALS Lab is a "half-lab" located in the staff development wing of the complex. It is a self-contained, newly painted room and, although totally refurnished as a PALS lab, retains the cheerlessness typical of the center. Two workstations contained only typewriters that remained covered during the sessions. Beyond these workstations are two highly sophisticated computer systems each with voice output and touch screens, hooked to individual laser disk drives with two sets of earphones and two seats at each system. To the left are four computer systems with each set of two sharing a printer through a data sharer. To the right is a teacher's desk, a storage cabinet, a set of open shelves with library materials and a vertical file. All the chairs in the room are ergonomically sound and are on wheels. Two posters are in view:

Principles of the Alphabet Literacy System and Phonemic Chart. The lab conforms physically to the description in the PALS manual with the notable absence of the writing table.

There are four "classes" in the program each meeting three times a week for either 75 or 90 minutes at a time. The program began early in February with 20 students; two have dropped out, and two others have enrolled since that time. Most of the students work for housekeeping or maintenance and, according to the staff, are not able to attend on a regular basis.

Two of the staff developers went to Syracuse for a two day training session and, upon return, shared their training experiences with their colleagues. Because the staff developers do not work the same hours or days each week, monitoring of the PALS lab is a shared process. This method has proven very effective because there is a great deal of communication between the teachers as they strive to meet the individual needs of each student. In addition, the students have learned to respond to a variety of personalities and have not grown dependent upon any one teacher.

TEACHERS

In this lab, there is one teacher present at each session. An 8 to 1 ratio is part of the PALS design. However, because of the demands of the students' jobs, there are rarely more than five students present at any given time. The teachers reported that many of the students have multiple physical, psychological, and emotional handicaps that account for their poor literacy skills and much of their time is spent helping the students cope with the learning experience. One student is perceived to be mentally retarded. During the session observed, the teacher on duty worked with each of the five students, helping two individuals read from the screen, helping a student partnership coordinate the work journal with the screen display, adjusting the data sharer for printing and positioning one student's finger for touch typing.

STUDENT PERFORMANCE

These students were still adjusting to the hardware. The touch screen did not respond as it should have and actions had to be repeated by the partners several times. It was evident that this had happened before because they neither questioned the computer response nor asked for assistance. There was a software content problem in that disk 9 began with lesson 3 while all other disks began with lesson 1. This caused unnecessary confusion for the students.

One student, who always arrives at noon and leaves at 12:30, worked on touch typing exercises and avoided oral communication with his peers and with the observer. He

accepted direction from teachers, but did not really communicate with her either.

Two other students, the "stars" of this class, were working at computer/printer stations moving along very well in their touch typing exercises. One student proudly showed me the speed and accuracy with which he is now able to read the activity options that appear on the screen as well as the speed and accuracy of his typing. The other student shared with me her dream of eventually qualifying for an office job.

TEACHER TRAINING

Two of the teachers were trained by IBM at a two-day seminar in Syracuse, New York. They reported that the training had been very intensive and that much of what was covered had to be experienced to be meaningful. They also reported that on-going help is available from project staff in Albany.

The teachers expressed a need for a special education consultant to help them cope with the physical, psychological, and emotional handicaps displayed by some of the students.

STUDENTS' REACTIONS

The four students who responded to the questions posed by the observer are very pleased with the program. They see this experience as an opportunity for self-improvement, for becoming good readers, for being able to write meaningful letters to friends and family, and for learning to type. In addition, one student reported that this time spent is a welcome "recess" from the physical demands of his job and hopes to be able to "read for pleasure" in the not too distant future. The motivating element for participation was self-improvement and personal growth.

No physical changes in the system were suggested by the students. One change in content was requested: real spelling instead of phonemic spelling.

TEACHERS' REACTIONS

The teachers reported that the program appears to have a great deal of potential for improving the reading and writing skills of adults. They indicated that this pilot semester is a learning experience for them and that future semesters will run more smoothly. One major problem for which they do not see a solution is the "partner" problem. It seems that the nature of employment at Pilgrim makes it very difficult for "partners" to always be available at the same time. This situation makes the work journal phase, where one student types while the other makes notations in his workbook, a very drawn-out process. In addition, all teachers perceived a need for a process that more completely diagnoses the learning difficulties of each student. They felt that the number of meetings, three times weekly for 90 minutes, would be adequate if students were able to attend

on a more regular basis. The teachers also felt that some of the pre-test results were too high to make post-test results significant in any way.

SUMMARY

A very enthusiastic student at Pilgrim shared the following thoughts with me. "All my life I have been poor and the government never cared. I went to an old school in which everything was broken and no one ever cared whether I came or whether I ever learned anything. Now the government is finally paying attention to poor people. (Stroking the computer/laserdisk system with affection, he continued.) This is education. At last the government is reaching out to me and I am going to become educated. I am learning to read and to sound out words and to find the letters on the keyboard and to type the sounds that the letters make. Yes, this is a very important new system and after I am fully educated. I am going to tell all the people I work with to come and get educated also. It is about time that the government noticed that we have been gypped and is finally doing something about it."

The student quoted above is probably the one the teachers believe is mentally retarded. Although he was very highly motivated, he was unable to distinguish between the t and d sounds as well as between the a and e sounds. The teacher handled the situation very well displaying as much patience as the ever-patient computer.

Personnel of both sites participated in the same training sessions and each site was sent a half-lab. Nevertheless, each facility has interpreted the learning experience within the greater context of its own work situation. The presence of the round table and chairs in the Kings Park lab tied the room together well and created an atmosphere conducive to cooperative learning that was not evident at Pilgrim. The teachers at Kings Park were assigned to the PALS lab while the teachers at Pilgrim had to fit the PALS lab into their other duties. Students at Kings Park were carefully selected from the group of applicants to match the description in the PALS manual. The teachers at Pilgrim worked under the assumption that no one who wanted to participate should be turned away. Pacing at Kings Park was group oriented while at Pilgrim it was very individually implemented.

The teaching personnel of both centers felt that the PALS lab is a potentially excellent tool for improving the literacy of underachieving adults. The students at both facilities expressed pleasure with the experience but none was really in a position to evaluate his own progress.

Perhaps it is not the intrinsic value of the technology that is the major issue but rather the perceived value of the experience on the part of the students and the teachers. The expressed feelings of all those involved, at all levels, is that this system is a beneficial approach toward improving the literacy skills of adult basic education

students. The teachers all shared a hope that this system might succeed where others had failed. Assessment of the content and the efficiency of the hardware are of secondary importance. To paraphrase a toothpaste ad, "It tastes good so he'll brush longer."

5.3 Data Analysis

The data for the evaluation of the PALS program were collected from three sites: The Brooklyn Development Center, Kings Park Psychiatric Center, Pilgrim Psychiatric Center. A total of N = 44 students were initially tested on the TABE reading test and the Skills profile. The TABE test yields a single score which is scaled in grade level units. After being in the program approximately 20 weeks, the students were retested on each of these measures. Biographical data with respect to the following variables were also obtained: age, sex, years of education, and whether or not English was the primary language. The statistical analyses of all of these variables are presented in the first section. The second section contains vignettes written by the program coordinators which qualitatively describe the performance of each student. The third section consists of a discussion of the cost effectiveness of the PALS program.

5.3.1 Quantitative Data

Background Data

In Tables 19 and 20, the background variables are described. In Table 19, the mean and standard deviation and minimum and maximum values for the age and education variables are presented. In Table 20, the percentages for the sex and primary language variables are presented.

Table 20. Descriptive Statistics for Age and Education (N=44)

Variable	Mean	Stand dev.	Minimum	Maximum
Age	39.0	11.2	19	58
Years of Education	9.4	3.0	3	16

Table 19. Percentages for Sex and Primary Language (N=44)

Sex: Percentage male = 57.1 Percentage Female = 42.9

Percentage of cases for whom English is the primary language = 63.6

It is clear from Tables 19 and 20 that the students participating in the PALS program have a rather low educational level, the average number of years of education being 9.4. In addition it should be noted that for approximately one third of the students, English is not their primary language.

Reading Scores

Table 21 summarizes the performance of the N = 44 students on the pre- and post- administrations of the TABE test. It should be noted that although 44 students took the pre-test, post-scores were available for only Npost = 13 students. The missing data are primarily due to the decision to omit students who had not progressed through a meaningful portion of the program at the time of the evaluation.

Table 21. TABE Test Scores

Pre Scores (n=44)		Post Scores (n=13)		Gain* (n=13)	
Mean	Std.	Mean	Std.	Mean	Std.
3.5	1.8	4.9	2.2	.9	1.1

*Gain scores (post-pre) were computed for the n=13 students having both pre and post scores.

An inspection of the results in Table 21 shows that the initial reading level of the students was quite low, the average reading level being grade 3.5. Using subjects for whom both pre and post scores were available, a gain of almost a full grade level (.9) is observed. In other words, on average students gained .9 grade level units after participating in the PALS program. Although this result suggests a positive effect for the program, the large amount of missing data and the relatively small sample size of n=13, make it difficult to draw any firm conclusions from these results.

The SKILLS Profile

Table 22 summarizes the pre and post responses of the students to the 40 questions of the SKILLS profile.

Table 22. The SKILLS Profile (Pre and Post Scores)
(Npre = 44 Npost = 13)

Question	Pre %yes	Post %yes
(1) I have the writing and reading skills I need.	35.7	41.7
(2) I can recognize all the letters of the alphabet.	90.9	92.3
(3) I would feel more self-confident if I could improve my reading and writing skills.	100.0	100.0
(4) My job requires some reading.	93.2	100.0
(5) My job requires some writing.	86.4	100.0
(6) I have problems with spelling.	90.9	76.9
(7) I have problems expressing my ideas when I talk.	59.1	69.2
(8) I have difficulty expressing myself in writing.	86.4	84.6
(9) I have problems reading aloud.	81.8	69.2
(10) I have tried to develop my reading skills by myself.	97.7	92.3
(11) I think I can improve my reading and writing skills through this program.	97.7	100.0
(12) I read at home.	86.4	61.5
(13) I can read newspapers.	72.7	76.9
(14) I can read magazines.	65.9	84.6
(15) I can read labels	90.7	84.6
(16) I can read novels and short stories.	72.7	69.2
(17) I write shopping lists.	63.6	69.2

(18) I write notes to myself.	59.1	46.2
(19) I write my thoughts and feelings.	39.5	38.5
(20) I have problems reading numbers.	20.5	23.1
(21) I like to talk about what I read.	90.9	91.7
(22) I have difficulty reading menus.	55.8	50.0
(23) I have difficulty reading maps.	54.5	58.3
(24) I have difficulty reading job instructions.	50.0	50.0
(25) I have difficulty reading street signs.	34.9	50.0
(26) I think there are some important things I miss out on because of my reading level.	76.7	66.7
(27) It is difficult for me to fill out forms.	68.2	50.0
(28) I find employment applications confusing.	59.1	50.0
(29) I have problems writing checks or money orders.	46.5	33.3
(30) I feel sorry for myself because of my reading skills.	54.8	59.3
(31) I am embarrassed at times because of my reading level.	68.2	58.3
(32) I can read from the Bible.	58.1	50.0
(33) I vote.	58.1	58.3
(34) I can read election ballots.	72.1	67.3
(35) I consider myself a capable worker.	100.0	91.7
(36) I can read the contents on cans and packages.	95.3	91.7

	Pre		Post	
	mean	std.	mean	std.
(37) Number of hours of reading each week	5.1	5.8	6.1	5.0
(38) Number of hours writing per week.	4.0	6.1	7.2	6.3
(39) Number of hours of TV per week.	10.7	10.7	11.8	6.3
(40) Number of hours in REACH program per week	4.4	1.4	5.1	2.4

The responses to the pre scores of the SKILLS PROFILE can be summarized in the following manner:

* Nearly all of the participants state that they have need of reading and writing skills to perform their job duties.

* Fifty percent or more of the students express difficulty with the following reading writing and verbal skills:
spelling, verbal expression, written expression, reading aloud, writing their thoughts, reading menus, reading maps, reading job instructions, and filling out forms. In addition, more than forty percent of the students express difficulty with the following: writing notes, writing checks, and reading the bible.

* Nearly seventy percent of the participants describe themselves as being embarrassed by their reading deficiencies.

A comparison of the SKILLS PROFILE post scores with the pre scores supports the following conclusions:

* Gains of approximately 10 percentage points or greater were reported with respect to the following variables: spelling (item 6), reading aloud (item 9), reading magazines (item 14), missing out due to reading (item 26), filling out forms (item 27), employment applications (item 28), writing checks (item 29), and embarrassment over reading (item 31). There are also reported gains for the number of hours of reading each week

(an average gain of 10 hours), and the average number of hours of writing each week (an average gain of 3.2 hours).

* On the negative side, there is a decrement of 10 percentage points or greater with respect to the following variables: verbal expression (item 7), reading at home (item 12), writing notes (item 18), and reading street signs (item 25).
* It is difficult to assess the meaning of these findings due to, again, the large amount of missing data. Whereas 44 students took the SKILLS pre-test, post-test data were available for only 13 of these students.

5.3.2 The Vignettes

Vignettes from PALS sites offer a view of the progress made by students. Two characteristic statements follow: Mr. G. states that when he first heard about the program he wanted to improve on his personal writing skills, and learn more about typing and computers. Mr. G. says that since he started the course he is reading and understanding what he reads a little better. He also states that his typing skills and computer skills have significantly improved. He states overall he is very happy with the class and feels it is very worthwhile to him.

Miss S. states she wanted to take this class to improve on her spelling and reading skills and to learn typing. She states she does not comprehend well what she reads. Miss S. says she notices a change in her spelling because of her typing skills improvement. She says that her concentration level is better when she reads. Overall, the program has motivated her more and made her job more interesting.

A general and gradual realization of the goals of students appears in the vignettes. Students report increases in all skills, including typing, reading of newspapers, signs, labels, application forms, use of resumes, check writing, licensing examinations, and increased participation and pride in their jobs. Both Project REACH and the PALS sites give evidence of a general sense of satisfaction by students. Students are motivated to participate and to continue to augment their literacy skills in the future.

5.3.3 Cost Effectiveness

As was the case with the One on Once program (4.4.3), it is difficult to perform a meaningful cost effectiveness analysis for the PALS program using the currently available data. The issue of overestimation of the cost per student is particularly relevant for the PALS program. The installation of a computer lab involves relatively large "start up" costs. Thus, initially, the cost per student may appear to be very large, lowering the cost effectiveness of the program. However, since many of these costs are

constant once the lab is initially configured, the cost per student can greatly decrease as more students enter the program. Since the three PALS programs investigated in the present study are all less than six months old, the number of participating students is relatively small. If one were to use this number of students in the computations the cost per student would be overestimated. For this reason, and in addition due to the large amount of missing data, a cost effectiveness analysis of the PALS program will not be presented.

5.4 Summary and Findings (PALS Program)

The PALS program was evaluated in terms of direct observations of three PALS labs (Brooklyn Development Center, Kings Park Psychiatric Center, Pilgrim Psychiatric Center) and the collection of pre- and post- data with respect to reading level (TABE test), and self reports of reading and writing skills (SKILLS PROFILE).

Direct Observations

Site visits were made by Evaluation Team members as well as by a reading specialist. These visits supported the conclusion that the laboratories were all functioning in accord with the specifications for the PALS program, and were having a positive impact on the reading and writing skills of the students.

Pre- and Post- Test Data

As was the case for the One-on-One program, the interpretation of the pre-post changes in reading were difficult to assess due to the large amounts of missing data on the post test. However, using the TABE scores for individuals having complete data, a gain of approximately one grade level was evidenced. A descriptive analysis of the 40 items of the SKILLS Profile showed that there were meaningful gains in reading and writing skills.

6. POSITIVE ASPECTS OF PROJECT REACH

Based on examination, observation, and assessment of all facets of Project REACH, as described in this Final Report, the CASE Evaluation Team concludes that the pilot program indicated promise, showed potential, and was effective for the following reasons:

* It responded to an urgent and pervasive need to improve literacy skills among New York State government workers.
* It followed the traditions set by unions for decades by involving the CSEA as program co-sponsors.
* The program utilized the workplace, thus providing a familiar and non-threatening learning environment. For example, the Volunteer Tutor Network of Project REACH allowed for direct dyadic literacy settings. The interactive and interpersonal features of the program provided a comfortable and natural environment for adult education. In addition, these tutorial settings provided free adult education environments in which tutees were offered the tutorial services of other workers. Familiarity with the needs, aspirations and particular educational goals of the tutees was facilitated by tutors working in the same agencies.
* Through the union contract, the project was subsidized and legitimatized by release time for tutors and students.
* More than one approach to improving literacy skills was included in the project, i.e. One-on-One Tutoring and PALS labs.
* Flexible time periods and site arrangements existed to accommodate participants in the tutoring component of the project. For example, the Volunteer Tutor Network's tutorial sites are readily accessible. Locations were provided for workers' convenience close to their workplaces.
* The Volunteer Tutor Network: One-on-One provided for individualized instruction, consistent with each student's motivation at program entry. On the other hand, the PALS lab component presented a structured approach to the teaching of reading.
* Project REACH employed simple, straightforward, and easily read recruitment materials, which are posted in highly frequented areas.
* The program was staffed by conscientious, hard working, dedicated, and highly motivated personnel.
* Training was conducted in two-day workshops for tutor volunteers by LVA consultants.

* Tutors and PALS lab staff members seemed empathic,caring, and genuinely interested in assisting students to upgrade their literacy skills.
* In summary, both of Project REACH's literacy skills components provided a non-hierarchical and supportive environment for adult learning. Program administration was extremely supportive. Tutors and PALS lab personnel appeared to be highly motivated and engaged in the purposes of the program. The absence of grading, testing and traditional pedagogical methods allowed for a more flexible, interactive mode of adult education.

7. RECOMMENDATIONS

In the short period since April 1987, the pilot project administrators established many features of a good workplace literacy program. In fact, they did extremely well considering their limited personnel and available time.

Additional personnel are required to implement all aspects of Project REACH. In particular, expanded administrative staff are necessary for the efficient coordination of extensive student and tutor records. Intake forms, tutor logs, attendance and dropout records, as well as pre- and post-test measures of reading and comprehension are necessary for up-to-date administrative effectiveness.

Personnel are also essential to fill supervisory positions at the various tutorial sites. Updated records of tutor-tutee progress, material requirements and problem solving are immediate needs of the program. Supervision of tutors' competencies, methods and materials is of primary value. Literacy consultation must be provided on an ongoing basis. Regular conferencing with tutors and tutor meetings should be implemented as soon as possible. At the present time criteria for the materials and methods used in tutorial sessions are determined largely by tutors with rare consultations from a Literacy Volunteer consultant. Materials must be appropriately selected to meet the tutees' instructional needs for improvement in their literacy skills. Testing for eye problems or neurological impairment of incoming students should be made available.

Individual conferences with prospective students are recommended in order to explore students' expectations, goals and needs in terms of Project REACHS's orientation and purpose.

Flexibility in scheduling should remain intact and be responsive to new students' needs. Twice weekly meetings rather than the single two-hour sessions should be explored as possibly more effective, distributed practice, suitable to the adult education population Project REACH is serving.

A major difficulty in assessing the value of a literacy program for adults is the construction of proper measures to assess reading level. It is not clear that the present READ test can provide valid indicators of an adult's reading level. First, the ceiling of the test is clearly too low, allowing for a maximum grade level of less than sixth grade. Using this test it is not possible to assess reading gains for students who initially score high on the test. Further, it is not clear if the test is adequately standardized. How are the grade levels assigned? Although it may be clear with respect to children what a sixth-grade reading level represents, the same assessment for an adult may make little sense. Another difficulty associated with the READ test is its content. It may be argued that to assure content validity, the test should include materials that describe commonly occurring job activities. The READ test appears to be deficient in this area. Similar criticisms can be made of the TABE test used in the PALS program.

Perhaps a more valid method for assessing literacy levels for adults could be based on a set of criterion referenced tests which are based on real life job experiences. For example, one component of the test would require the examinee to read and fill out an actual job application form. Scores on such a test would clearly be content valid. It is hoped that future research can be directed toward the development of such criterion-referenced measures.

If Project REACH is to become even more effective as it moves beyond its present pilot stage, the following summarized recommendations should be strongly considered:

Project REACH should -

1. be given additional funding in order to hire additional staff members who are reading and literacy skills experts;
2. use the expertise of present staff members for administration, supervision, and organizational functions;
3. conduct regular and ongoing staff development and training sessions for tutors and other trainers;
4. appoint personnel to observe and monitor the ongoing program regularly;
5. employ consultants to develop appropriate resource materials and curriculum for the Volunteer Tutor Network: One-on-One component;
6. develop, with the assistance of consultants, instruments by which to document the project's success, and
7. expend additional efforts to assure a more organized and complete system of data collection. Because such limited post-test data were presented, evaluators were unable to make significant statements about the impact of Project REACH in terms of its ability to improve literacy skills. By providing pre-/post-test data for such a small number of participants, it is possible that a disservice was done regarding the ultimate effect of Project REACH on literacy skills. Future evaluations of Project REACH should be based on a mandated process of pre-and post-test data gathering.

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APPENDIX A

9.1 PROJECT REACH WORKPLAN

PROJECT REACH WORKPLAN

Purpose

Project REACH (Reading, Education and Achievement) is a successor to the CSEA IDEA Program (Institute for Development, Education and Advancement).

The purpose of Project REACH is to experiment with various reading skills programs for employees who read below an eighth grade level.

Audience

The audience for this program is comprised of CSEA represented state employees who read at a level below eighth grade.

In March 1986, Cybernetica, Inc. performed a needs assessment for CSEA focused on the range of need for basic skills in the CSEA represented State employee population. The assessment revealed a sizeable portion of that population to be in need of reading skill development. Approximately 13% of the sample read below eighth grade, with 8% of the sample at or below a sixth grade level. As such they are considered by most standards to be semi-literate or illiterate. It was this group which was targeted for reading training by the 1985-88 contract between New York State and CSEA for the Administrative Services, Institutional Services, and Occupational Services bargaining units.

As participants complete the REACH program by attaining an eighth grade reading level, they will be counselled into other education programs, including self-study. It is the eighth grade reading level which is generally held to support self directed study. Students seeking to continue with GED, college or exam preparation studies, or refresher training will be referred to other currently available programs, after first insuring that they have sufficient skills at reading in order to successfully take advantage of other programs. Channeling "graduating" participants to other programs will allow the project to continue to focus its resources on the target group in a way which accomplishes its major objective.

Methodology

Through Project REACH, a series of delivery approaches for reading skills training will be tested, initially on a limited scale. Since the target population is at various levels of reading ability, and geographically dispersed throughout the State, often working on shifts, it is likely that no one delivery approach will suffice.

A range of factors will be considered when comparing delivery modes and their potential impact on the target audience, or sub sets thereof. After the rate of success and other data is available or each approach tested, and a comparison made between approaches, consideration will be given to modification, continuation, expansion and/or

deletion. Ongoing research by project staff will help insure that only up-to-date, cost effective delivery methods are tried.

Program location, release time issues, and varying student needs, are just a few areas to be considered during each pilot. Some delivery approaches may work better in one location or situation than in others. For instance, student dispersion and transportation issues in our more rural areas will be addressed by piloting the use of especially-designed VCR cassettes. Viewing of these cassettes will be arranged through agency education and training offices or by making them available for home use.

Additionally, an Advisory group with a broad range of interests will be formed. It will be a principal task of this group to oversee the objective consideration of pilot results and their implications.

REACH's long-term intention is to make available suitable reading skills training to any CSEA represented State employee who reads below the eighth grade level.

Experimental Approaches

What follows is a more detailed overview of the currently defined program components. Additional delivery mode pilots will be undertaken consistent with the availability of resources, progress on those initially undertaken and as our research leads us to believe testing a method may help to meet our needs.

Volunteer Tutor Network: One-on-One

Amongst the pilot delivery approaches to be weighed is a volunteer tutor model in the Albany area. Volunteer tutor networks provide a one-on-one method of instruction, take into account the sensitivity of the literacy issue by depending on a reasonably contained and private relationship, and offer other advantages such as scheduling and meeting location simplicity. Our pilot will seek to determine if these and other anticipated positive aspects of a tutor system outweigh their reputed slower learning progress.

Tutoring is a flexible approach since tutor and student mutually agree to the time and place for sessions, usually two or three per week. It is a relatively inexpensive approach, with tutors serving for free. Its major cost is up front for tutor preparation and in providing both tutor and student with needed workbooks and materials.

Tutors will be recruited in targeted State agencies in the Albany area through a direct mail appeal. Letters signed by the upper management and appropriate union officials will be distributed to all employees at Albany locations in the targeted State agencies. The unions will also be asked to appeal directly to their local officership, by letter at thee locations. Volunteers will be asked to make themselves known through each agencies' education and training office.

Potential tutors will be screened and, if qualified, will participate in a two-day tutor training session away from the worksite in sufficient numbers to form the pilot tutor network. Tutor qualifications are possession of a high school diploma, a current reading level of tenth grade or higher, a willingness to meet regularly, and successful completion of tutor preparatory training. Once the tutor is trained and becomes certified, h/she will be matched with a student. Student and tutor will enter a learning contract where they initially agree to meet for a minimum of two hours, twice a week, until the student attains the goal of an eighth grade reading level.

Student recruitment will also rely on agency management of each Albany location of the targeted agencies, but more heavily upon the CSEA union local officership. (See Recruitment/Public Relations action below).

PALS: Computer Interactive Training Lab

IBMS's new interactive computer literacy program is "PALS" (Principle of Alphabet Literacy System). PALS is geared to students below a sixth grade reading level. Students meet in assembled groups, and progress rapidly, with the assistance of interactive programming running on personal computers. A PALS learning lab can accommodate several classes of reading students each day. The lab is also a perfect setting for many other types of training programs.

Through PALS the student progresses quickly, attaining a sixth grade level in a maximum of 20 weeks. Sessions are one hour per day, five days per week. Several groups can use the lab on any given day. In addition, the lab is well suited for use in other computer related training, during any period when the lab is not being sued for reading skills training.

Relatively high learning lab costs will be weighed against anticipated rapid learning pace and therefore high student turnover as successful students exit, leaving room for new participants.

The PALS lab will be conveniently placed at one large State facility on Long Island. We anticipate sufficient need in the immediate area to support full utilization of the lab. Since the primary user group will come from the several proximate direct care facilities, program administrators will be able to learn much about using the lab on a cooperative interfacility basis, as well as about the special considerations necessary to make the lab available to shift workers. The PALS pilot, once evaluated, and if successful, will be expanded to other areas with high potential student density. In the alternative, the active lab can be transported to their locations once the need for it has been satisfied in one locale.

Video Learning

Another delivery method to be tested is that of audio/video tapes. Several forms and tapes are currently available, and Project REACH will produce additional specialized tapes as well as insure that all material is available in a range of formats to meet student needs in different settings or on differing equipment.

In addition to the use of tapes through facility education and training offices or at home, public television broadcasts will be arranged. Production of specialized tapes to meet the target groups specific needs might well qualify for supplemental funding support through existing grants and endorsement programs in the literacy field.

Through piloting, a range of formats and programs can be compared, and programs expanded, modified or deleted, based upon th findings of the pilots. At the same time, continuing research will be conducted to bring into the pilot the latest in audio/video programming for evaluation.

Recruitment/Public Relations

Since the target audience for Project REACH reads at a relatively low level, much attention will be given to the reading level of program announcement and recruitment materials. Thee materials will rely heavily on pictures, be written at the fifth grade level or below, and be done in bright, upbeat colors. Formats under consideration are: leaflets, audio/visual tapes, supplementation of recorded and spoken segments of the new State wide employee orientation program for CSEA represented employees, table displays and slide presentations in public areas of State facilities, pay check inserts, announcements and related handouts at union meetings and through the local union officership and committee structures, reliance on advocate and peer groups and through the EAP network. Additional methods will be used, as they are identified.

Another important issue for a literacy program is the emotional and status stigma that some would attach to the issue of one's inability to read. Our approaches will consider both issues of reading level and the emotional implications of illiteracy.

Research Methods

Ongoing research and tracking existing reading programs will continue, well beyond assessing the active REACH pilots. The technological and theoretical advances in this field are constant and rapid. For example, Pennsylvania State University's Institute for the Study of Adult Literacy is commencing a major, computer assisted, literacy experiment in 1987, and SUNY has just created a Center for the Study of Literacy.

Additionally, State and federal legislation will be monitored to keep informed on potential supplemental funding sources for the Project. Whenever appropriate, project staff will attempt to secure not only public, but private

supplemental funding for REACH. In addition to many endorsements and grants that are potentially available, many private corporations either loan or outright donate equipment, materials, etc. where the issue is literacy and reading skills training.

Project REACH will actively join the growing network of adult literacy programs, not only in an effort to learn, but to share what we have learned.

Evaluation

Each of the delivery methods tested will be carefully evaluated. Some evaluation areas to be considered are:

- student enrollment and advancement rate
- student drop-out rate
- student satisfaction level
- impact of the various public relations methods and materials on recruitment, retention, and advance rate
- student surveys on type of PR which attracted them to program, misperceptions, expectations/experience match cost benefit analysis of each delivery method with the others.

An analysis and program evaluation will be performed after the first 9 months of program operation. Delivery modes will undergo change if necessary, and program components will be revised at anytime the need to do so becomes evident.

Each new program method will be tested on a small scale basis until sufficient data is generated to ensure that necessary revision occurs before state wide expansion.

APPENDIX B

9.2 SKILLS PROFILE

SKILLS PROFILE (Pre-Test)
(Post-Test)

Please check YES or NO to the statements below.

1.	I have the reading and writing skills I need.	___ ___
2.	I can recognize all the letters of the alphabet.	___ ___
3.	I would feel more self-confident if I could improve my reading and writing skills.	___ ___
4.	My job requires some reading.	___ ___
5.	My job requires some writing.	___ ___
6.	I have problems with spelling.	___ ___
7.	I have trouble expressing my ideas when I talk.	___ ___
8.	I have difficulty expressing myself in writing.	___ ___
9.	I have problems reading aloud.	___ ___
10.	I have tried to develop my reading skills by myself.	___ ___
11.	I think I can improve my reading and writing skills through this program.	___ ___
12.	I read at home.	___ ___
13.	I can read newspapers.	___ ___
14.	I can read magazines.	___ ___
15.	I can read labels.	___ ___
16.	I can read novels and short stories.	___ ___
17.	I write shopping lists.	___ ___
18.	I write notes to myself.	___ ___
19.	I write my thoughts and feelings.	___ ___
20.	I have problems reading numbers.	___ ___
21.	I like to talk about what I read.	___ ___

22. I have difficulty reading menus. ___ ___

23. I have difficulty reading maps. ___ ___

24. I have difficulty reading job instructions. ___ ___

25. I have difficulty reading street signs. ___ ___

26. I think there are some important things I miss out on because of my reading level. ___ ___

27. It is difficult for me to fill out forms. ___ ___

28. I find employment applications confusing. ___ ___

29. I have problems writing checks or money orders. ___ ___

30. I feel sorry for myself because of my reading skills. ___ ___

31. I am embarrassed at times because of my reading level. ___ ___

32. I can read from the Bible. ___ ___

33. I vote. ___ ___

34. I can read election ballots. ___ ___

35. I consider myself a capable worker. ___ ___

36. I can read the contents on cans and packages. ___ ___

Please fill in the number to complete the additional statements below:

37. I spend about ___ hours reading each week.

38. I spend about ___ hours writing each week.

39. I spend about ___ hours watching TV each week.

40. I spend about ___ hours working on this literacy program each week.

CODE NO._____ (Indicate your birthdate in 8-digit form) e.g., January 2, 1945 becomes
01 02 1945

December 13, 1948 becomes
12 13 1948

APPENDIX C

9.3 CHECKLIST

PROJECT REACH

BACKGROUND DATA CHECKLIST

NAME:_____

SOCIAL SECURITY NUMBER:_____

DATE OF BIRTH:_____

MALE _____ FEMALE _____

HIGHEST GRADE COMPLETED IN SCHOOL _____

IS YOUR FIRST LANGUAGE ENGLISH? YES _____ NO _____

IF NO, INDICATE YOUR FIRST LANGUAGE _____

PRESENT JOB TITLE:_____

APPENDIX D

9.4 PALS TEACHER'S MANUAL

APPENDIX E

9.5 PEOPLE REACHING PEOPLE

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9.5 PEOPLE REACHING PEOPLE

The following report is a compilation of questionnaire response of CASE personnel to a series of videotapes, a student's workbook, and instructor's manual prepared for Project REACH. These materials were designed to assist in the improvement of the workplace literacy skills of employees in New York State mental health facilities.

Eight members of the CASE staff were asked to review the student's workbook and instructor's manual, as well as to view the videotape series, and respond to a reaction sheet designed by the CASE Evaluation Team. (Copy of the reaction sheet appears on the following page.) In order to facilitate the assessment process, reviewers were given access to the student's workbook and instructor's manual prior to the date set for viewing the videotape series, which included an orientation to Project REACH with particular emphasis on this approach for literacy-skills improvement.

Six videos, a student's workbook, and an instructor's manual were evaluated. The student workbook and six videotapes focus on the specific job tasks of a Mental Health Therapy Aide (MHTA) and a Community Residence Aide (CRA). Instructors in several state-wide mental retardation and developmental disabilities facilities will use the instructor's manual to help MHTA's and CRA's view the videotape series, complete workbook assignments, and develop more effective team relationships with other health care workers.

All respondents agreed that the purpose of the videotaped program was to describe the on-the-job duties of Mental Health Therapy Aides and Community Residence Aides. All respondents also agreed that the purpose of the videotapes was to improve the skills of MHTAs and CRAs. All respondents indicated that videotapes were designed to foster team participation of MHTAs and CRAs with other health care personnel.

Respondents differed in their assessment of the potential of the videotapes for motivational impact. The questionnaire queried respondents with regard to the videotapes' purpose in terms of their potential for motivating MHTAs and CRAs to improve job-task related skills. These skills include reading, writing, recordkeeping, vocabulary level, map-reading, bookkeeping and inventory skills.

The following table presents questionnaire responses regarding the videotapes' potential for impact on motivating MHTA and CRA employees to improve their skills.

MOTIVATION FOR SKILLS IMPROVEMENT

Skill	No. of Responses (N=9)
Reading Skills	8
Writing Skills	4
Recordkeeping	0
Vocabulary Level	5
Map-Reading	1
Bookkeeping and Inventory Skills	5
Other	2

PROJECT REACH - PEOPLE REACHING PEOPLE REACTION SHEET

1. What are the purposes of this videotape program? (Check all that apply.)

a. to describe on-the-job duties of Mental Health Therapy Aide (MHTA) and Community Residence Aide _____

b. to improve the interpersonal skills of MHTAs and CRAs _____

c. to foster team participation of MHTAs and CRAs with other health care personnel _____

d. to motivate MHTAs and CRAs to improve their
1) reading skills _____
2) writing skills _____
3) recordkeeping _____
4) vocabulary level _____
5) map-reading _____
6) bookkeeping and inventory skills _____
7) other _____

2. How does this program assist workers to read better?

3. What is the relationship of the Student's Workbooks to the videotapes?

4. What is the relationship of the Instructor's Manual to reading improvement?

5. Is the vocabulary level appropriate for the target audience?
a. in the videotapes?
b. in the Student's Workbook?

6. Is the reading level of the Student's Workbook appropriate for the target population?

Yes _____ No _____ Why?_____

_____

_____

7. Other comments_____

The two respondents who cited motivation to learn other skills observed the tape's ability to facilitate instruction taking as well as alertness and the exercising of greater care of clients. One respondent observed that the videotapes might influence employees as a general motivational prompt toward skills improvement rather than any one specific skill.

Several respondents were critical of the program's ability to assist reading improvement. The only positive response cited the program's motivational component. It was stated also that employees were more likely to be concerned with performing their tasks well after the on-the-job training sessions using the videotape program. Another respondent stated that the video program does not assist workers to read better and that the program requires a "well trained reading instructor." One respondent claimed that the program itself does not teach literacy, but is an "excellent stimulus to teaching reading and writing." This respondent perceived a need for both a teacher's manual with specific instructions for an "interactive" use of the tapes as well as teacher training for specific reading instruction and the use of videotapes in facilitating the process of general skills improvement.

In response to the question regarding the relationship of the student's workbook to the videotapes respondents generally saw a motivational element. One respondent saw the tapes providing "a basis for motivating discussion and activities." Another observed the need for sensitive teacher training and that the tapes would be "counterproductive" if students attempted to work independently of the mediation of a well-trained teacher.

With regard to the question of th relationship between the Instructor's Manual to the teaching of reading, all respondents were critical. A number perceived no relationship at all in the current manual. One observed a lack of reference to reading materials and another called for revision by a reading specialist. Respondents saw a clear need for the development of a training guide and materials designed by trained reading instructors who could provide both materials and the means toward skills improvement.

The following Table records responses to the question regarding the appropriateness of the vocabulary and reading level of the materials to the target audience.

VOCABULARY AND READING LEVELS

APPROPRIATENESS

	Yes	No
Videotape	3	4
Student's Workbook	3	5

Most respondents found the reading level of the Student Workbook inappropriate to the target audience. One respondent claimed that the sentence structure of the workbook was at too high a level and that too much information had been presented verbally on the tapes. This respondent also found the pages "too cramped" and saw a need for larger print with less information per page. In addition, "workbooks need to include basic word attack, syllabification and structural analysis skills based on workplace relevant vocabulary." Another respondent observed that there was no indication where the vocabulary was taught nor where concepts and meanings were discussed with students.

Other comments on the materials included criticism of the rapidity of the voice speaking on the tapes and an overabundance of material. It was also noted that reading materials should accompany the videos. One respondent stated "instruction should be provided on videos so that students can respond during a 'hold' period and then check responses when showing of film is resumed," thus providing an interactive experience.

Overall, this review of the materials provided for the training of mental health workers found a general basis for future development and application. The textbook materials were assessed as motivational supports for worker training and exposure to the issues and concerns of their daily responsibilities. The materials were considered to be in need of reappraisal by reading specialists for skills development and lesson planning. Workplace relevant vocabulary and the provision of context based conceptual knowledge are regarded as essential for the realization of the potential of these workbook and teaching materials.

"END OF DOCUMENT"